

234k19

# ATTEMPTS

TO REVIVE

Antient Medical Doctrines.

- |                                               |                        |
|-----------------------------------------------|------------------------|
| I. OF WATERS in GENERAL.                      | III. OF SEA VOYAGES.   |
| II. OF BATH and BRISTOL WATERS in PARTICULAR. | IV. OF LOCAL REMEDIES. |
|                                               | V. OF the NON-NATURAL. |

WITH

## AN APPENDIX.

VI. OF PLAISTERING in the SMALL-POX.

The Whole confirmed by Histories or Facts.

By ALEX. SUTHERLAND, M. D.  
Of BATH and BRISTOL HOT-WELLS.

VOLUME THE FIRST.

MULTA enim in modo rei, & circumstantiis nova sunt quae, in genere, nova non sunt. Qui autem ad observandum adjacet animum, ei etiam, in rebus quae vulgares videntur, multa observatu digna occurrunt. BACON de Augment. Scientiar.

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M.DCC.LXIII.





To the RIGHT HONOURABLE

H U G H,

EARL of NORTHUMBERLAND,

LORD and BARON of WARKWORTH, and Baronet.

Knight of the most noble ORDER of the GARTER,

Lord-Lieutenant of the KINGDOM of IRELAND,

LORD of the BED-CHAMBER to his MAJESTY,

Lord-Lieutenant of the County of Middlesex,

&c.

MY LORD,

FROM a survey of the works of nature, *Improve-*  
as well as from that harmony which sub- *ments ne-*  
sists between its parts, we may rational- *cessary to*  
ly conclude, *Nilil Deus frustra.* The antients, *the happi-*  
who believed that they saw all the stars, believ- *ness of so-*  
ed also that they had fixed their number. Af- *cicty.*  
tronomers believe the stars to be innumerable.  
The planet of *Saturn* is four thousand times bigger  
than the *Earth*. *Jupiter* eight thousand;  
and the *Sun* bigger, by a million. Imagination  
is lost in that immense space which contains  
these great bodies. It is an immense space (says  
*Paschal*) of which the centre is every where,  
and the circumference no where. The author  
of nature not only concerns himself about our  
creation, but about our preservation also. Those

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animals which serve for our food are those which multiply fastest. Were the savage creatures to breed as fast as the domestic, man would not long continue Lord of the universe. The idea of finite supposes infinite. In spite of pride, we feel a dependance in our hearts. That littleness, in animals, which we discover by microscopes, is equally inconceivable with that magnitude which astronomers discover by telescopes; so that we seem to be placed between two infinitudes, one in greatness, the other in littleness. Men are, by nature, formed for society. Mutual necessities prove the text. Princes grant protection to mechanics; mechanics administer to the wants of princes. The author of nature has amply provided for our happiness. The lot of every man is so cast, that, to society or posterity, every man has it in his power, in some measure, to be useful. The divine happiness stands in no need of our services. By administering to the wants of one another, every man has it in his power to please the Almighty. In this, interest and duty coincide.

*Thermology cultivated by the antients.* Every man of profession is, in honour, bound to cultivate those advantages which his situation affords. For the sake of posterity, the *juvantia et laedentia* of those instruments with which we labour, ought faithfully to be recorded. This was the practice of the divine Hippocrates. Had this copy been but duly pursued, the practice of physic might not have been so uncertain as at this hour. To no branch of the healing art is this doctrine so applicable as to that which concerns mineral waters. In no branch may observation be truly said to be so deficient. Among the antients, *Thermology* was a rational scientific doctrine. Pursuing the ex-

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ample of the Asiatics, the Romans prepared Baths for recreation, cleanliness, and health; *pro veteri instituto, ac studio virium, pro munditia, pro sanitate, atque omni cura corporum.* As the Majesty of the Roman Empire increased, so did *Architecture; more Graecorum, Palestræ cum Thermis conjunctæ.* Imperial pride was, in no instance, so conspicuous as in the stately structures of Baths. Nero, Alexander Severus, Commodus, Aurelius, Dioclesian, Constantius, Appius Claudius, and almost all the Emperors, raised sumptuous Baths, which bore the names of their respective founders. Baths were erected in every province that submitted to the Roman yoke. *Calabria, Sicily, Ascalon, Damascus, Ptolemais, Germany, Spain, Gaul, and Britain,* had Baths now venerable in their ruins. For the space of six hundred years, Rome hardly knew any other medical aids than that of Baths, and some few empirical nostrums. By the rational use of Baths, the wise antients prevented, and cured diseases. Even, in times of general licentiousness, women mixed not with men. There were not only private, but public Baths for women, the *Agrippinae, Olympiades, Ampelides, Priscillanae, &c.* Baths were free to all, the *munera Divum*, the sacred themes of poets, and historians.

In the Pontificate of Sixtus Quintus, and long before, the Italian Baths fell under the censure of that aphorism, *extremis morbis extrema remedia.* Baccius accuses his cotemporary Physicians of negligence and ignorance. The kingdom of Great-Britain boasts not of one public bath worthy so to be called. To the rational doctrine of bathing, practice still pronounces us strangers; insomuch, that, to ourselves we may apply that charge which Baccius honestly

*Thermobeglected by the moderns.*



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lays against the physicians of his days, *Quam partem miror nostros seu negligentia, seu ignorantia omisisse.* Leland, Jones, Venner, and almost every Bath-writer has exposed the imperfections, and abuses of our Baths. As Pliny the younger complained of the Baths of *Claudiopolis*, so truly may we of ours. "The aedifice seems rather sunk into the earth, than raised above the ground." That picture which Baccius draws of the Italian Baths of his days serves exactly for ours. "*Angustae ac tenebrae, carent omni commoditate, et delicia, ac noxiae idcirco, invisae potius quam gratiae et utiles.*"

Animated by Baccius's bright example, I have employed my leisure hours in inquiring into the antiquity, construction, operation, use, and abuse of Baths antient and modern.

*Health a  
common  
concern.*

HEALTH is a subject that has employed the pens of philosophers, as well as physicians. Plutarch, Porphyry, Cornaro, Lessius, Bacon, Boyle, and Addison have wrote on the subject of health. Every part of my book tends to the improvement of health. Your Lordship was pleased to peruse, and approve the experimental part of my manuscript. In your own person you have experienced the inconveniencies of *Bathing*. *Bristol-Waters*, and the doctrine of *Sea-air*, and *Exercise* are parts also of my subject. Your son, Lord Warkworth, is an illustrious example of the powers of both,

Names, patronages, and authorities add but little weight to philosophic disquisitions. From readers possessed of your Lordship's learning, taste,

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taste, and politeness, authors have nothing to dread. Critics who read only to find fault, may be compared to crows who fasten on carrion, while they avoid sound flesh. For my errors and imperfections I crave no particular exemption; with the best intentions, I have pried into authors antient and modern; quires have I committed to the flames. If my book suffers a second impression, I think I can already discover faults which may escape critical censure.

*England and Scotland* have long lost their usual acceptance: These are terms which serve now only to denote the distant corners of a kingdom mighty in its union.

*Britons  
neglectful  
of domestic  
advantages.*

“The *Hotspur* and the *Douglas* joined together,  
“Are confident against the world in arms.”

Never perhaps did nature pour forth her gifts more abundantly than on this little island. Never perhaps was there a people so deaf to the calls which concern their own interests. While neighbouring nations mourn over ravished inheritances, basking under the sun-shine of paternal rule, we spurn at the hand which protects us. Nature has not only blest us with the means of defiance, but she has cherished us also with the implements of health, ease, and luxury. Waters long discovered, and once richly adorned, lie now rude, neglected, and incultivated. For the purpose of health, men of all ranks resort to *Bath*. Bathers have long lamented and continue to lament the dangers of bathing. Reason and argument may, in lesser matters, avail. But there are inveterate

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errors, ignorances, and imperfections, such as exceed the force of reason, such as require the force of spirit, and address, such as call for the interposition of dignity, and office.

*Abuses.*

How, or at what time, these Baths were destroyed, is neither material nor clear. By the perfection of the ground-plot, we may reasonably pronounce, that they fell rather by the hand of violence, than that of time. Long lay they neglected, receptacles of carrion, ordure and rubbish. By consecrating the waters to *Cbrist*, St. David cleared them of paganism, and begirt the main springs with rude gothic walls, as they now appear.

Abuses multiplied so fast that a petition was presented to James I. for power to reform. The *Corporation* joined in the petition which was actually lodged, but the King's death unfortunately intervening, the design was dropped. Old abuses continued, and new ones increased, inso-much that we find Dr. Jorden (in his *Discourse of natural Baths*) complaining to the Chancellor of the Exchequer, "That the waters could not do that good which providence had designed, for want of that police which foreign Baths enjoyed, many being driven, on these accounts, to the foreign Baths of *Bourbon* then cherished by public munificence."

*Attempts to  
restore the  
Baths.*

THE late *Mr. Wood* was an architect formed by genius, inclination, and interest to make Bath the *Baiae* of the world. Finding it a Herculean labour to raise minds centred in interest to objects of common utility, and following Dr. Jorden's advice, he formed a design of rendering

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ing the King's and Queen's Baths more commodious. While he meditated this partial reformation, he was importuned by men of distinction to extend his design. The interest of the *Great* was frankly offered. Thus encouraged, he enlarged his scheme. He detached his intended structure from private property. The avenues to the springs were to be free and open. His work is still inexecuted, the plans remain. The promises of the *Great* are promises still.

Influenced by public humanity, *Mr. Dingley* has proposed a scheme for raising a sum of about 30,000 £. on life annuities payable out of the fees arising from the pumpers lease. This sum is to be laid out in the purchase of tenements encumbering the main spring. On the ground-floor he proposes to build public and private baths, dry pumps, sudatories, with other medical conveniencies. Over these, *Lodging-houses* are to be built, such as might bring in an annual rent of 600 £. a part of the fund for discharging the annuities. On the demise of the annuitants, the property of the building is to devolve to the *Corporation*. At his own expence he has published elegant plans of the design.

In clearing away the foundation of the old *Priory*, hot mineral waters gushed forth, and interrupted the workmen. Proprietor of that particular spot on which the left wing of the Roman Bath was built, *His Grace the Duke of Kingston* has improved the waters, as far as that space of ground admits of, by erecting six private *Bagnio's*, with corresponding *dressng-rooms*. To these he has added two *dry-pumps*, all to com-



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commodious that patients may resort to them any hour of the day.

From this short sketch, your Lordship may form an idea of the Baths in their primitive splendor. To these I have opposed them in their present rude construction. I have hinted at those abuses which endanger the springs. I pointed out those feeble attempts which have been made towards the restoration of the Baths. For full satisfaction, I beg leave to refer to the first part of this work, *A Comparative View of Baths Antient and Modern.*

*Reparation of Baths a subject not unworthy of Trajan's attention.* THE reparation of simple artificial Baths was a subject not unworthy of the attention of Trajan. How beautiful that epistolary correspondence between that Emperor and his Minister! In one letter we find *Pliny* applying to his master for leave to rebuild the Bath at *Claudiopolis*. Granted. In another, the same Minister writes thus. “The *Prusenses* (Sir) have a Bath that “is old and ruinous. With your permission “they are desirous to repair it.”—*Answered,* “If the public funds be not overburdened by “building a Bath, I am willing to indulge “their request.”—On the subject of the same Bath, we find the Minister again soliciting. “While I was searching for a situation to build “the Bath which you have permitted, I was “particularly pleased with a spot of ground “where once there was an intention to build “a temple to the deified *Claudius*. The *Prusenses*, Sir, will acknowledge it as a particular “favour if you will grant them this piece of “ground; or allow them, as it is so convenient “to purchase it.” Trajan answers immediately,

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ly, " I am willing (*My Dearest Secundus*) that  
 " the court and house at *Prusa*, which you  
 " mention, should be applied to the use of the  
 " Bath, provided the building has not already  
 " been consecrated."

Revolutions may, in general, be compared *Political*  
 to caustics; while they destroy luxuriant rotten *system of*  
 flesh, they sometimes injure the sound. Dis- *Britain*  
 joined and united, *Britons* have ever been fond *improved.*  
 of foreign connections. In quarrels unnatural,  
 blood and treasure have in all ages, been ex-  
 pended. In the person of the reigning Prince,  
 the constitution may be said to have suffered a  
 happy change. George is attached to his peo-  
 ple by ties natural and political.

" Jam redit et *Virgo*, redeunt *Saturnia* regna,

" Jam nova, progenies caelo demittitur al-  
 " to."

His mind has early been tinctured with vir-  
 tues which nothing can obliterate. In the bloom  
 of youth, vigor, and imperial power, George  
 presents himself a pattern of religion, oecono-  
 my, temperance, and virtue. For the sake of  
 freedom, he has freely parted with preroga-  
 tive, and revenue. Had *Hampden*, *Russel*, or  
*Sydney* been blest with but a glimpse of these  
 our happy days, with good old *Simeon*, they  
 must have exclaimed, *Now lettest thou thy ser-*  
*vants depart in peace; for our eyes have seen thy*  
*salvation.* With what rapture would they have  
 exchanged the rampant lawless administration  
 of a *Buckingham*, for the constitutional coun-  
 sels of a *Bute*!

Were

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Were simple artificial Baths objects worthy of a *Trajan*; why should not natural hot medicated springs be thought worthy of *George*? *Trajan* had long been versed in the schools of politics, and warfare. The virtues of his heart were not inferior to his other qualities.

In goodness of heart, *George* is second neither to *Trajan*, *Titus*, or any other royal saint. At their accessions, *Trajan*, and *Titus* found empty coffers, heavy debts, and grievous taxes. What cannot virtue surmount!

Public  
economy  
capable of  
improvements.

*Parfimonia magnum est vestigal.* *Vespasian* was a special pattern of temperance. By his own frugality, he made all men frugal. The people had a veneration for their prince, a tie stronger far than the dread of penal laws.

When *Henry quatre* came to the throne, the people groaned under loads of taxes, while the exchequer was empty. To serve the purposes of the vilest of times, useless offices had been created. With supernumerary *commissaries*, and *clerks*, *Henry* recruited his army. While he eased his people, he filled his coffers. Night and day did he labour with his trusty *Sully* for the public good. He would have secured the happiness of every peasant; but he was too virtuous for his people. Like the *Romans* of old, the *Gauls* had degenerated from their ancient virtue; they had been so long corrupted, that the virtues of a patriot king and minister, dazzled their consciences, as well as their eyes. In *Livy*, we find the *Romans* brave, temperate, and just. *Tacitus* represents them false, spiritless, and debauched. At noon loud in  
behalf

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behalf of *Galba*, vehement in calling for the blood of *Otho*. Before night they were as loud in the applauses of *Otho*, as vehement in traducing *Galba*, whom they murdered, and whose carcass became the sport of a rabble heated by the factious trumpets of men disappointed and desperate.

Henry VII. was a political prince, he left a full Exchequer.—To the lust of Henry his son, and to the ambition of his Minister *Wolsey*, millions of millions were sacrificed.—Religious lawless fury was the characteristic of *Mary's* reign.—When Elizabeth mounted the throne, the public finances hardly supplied the expences of the court. Oeconomy made Elizabeth Arbitress of Europe. *Elizabeth* and *Burleigh* are names sacred and inseparable.—The *Highb and Mighty States* are stupendous monuments of industry, oeconomy, and necessity.

Public works ought to do honour to the public. Wood's, Dingley's, and his Grace of Kingston's designs challenge public attention. But, why should modern plans be preferred to real Roman? Partial structures require constant alterations. Why should Imperial Britain be denied what Imperial Rome once bestowed on two of her legions only?

Around our springs, and under our feet lie, this day, ruins of Baths truly Roman. In the space of one wing, we have fairly traced vestiges of antient *Apodyteria*, *Hypocausta*, *Caldaria*, *Tepidaria*, *Frigidaria*, *Sudatoria*, *Vaporaria*, *Balnea-pensilia*, *Praefurnia*, *Tubuli*, &c.

The



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The *Praefurnium*, *Hypocaustum*, and *Vaporaria* of the eastern wing were violated to make way for modern simple conveniencies. The pavements of the square and semicircular Baths belonging to this wing are left unhurt. The walls, and bases of the pilasters are again covered over with *lodging-houses*, as are all the rest of the Roman ruins, the identical ground-plot of *Solinus's* British Baths, his *fontesque calidi opiparo exculpti apparatu, ad usus mortalium*. The Parliament needs only to grant a sum for the purchase of those houses. The pavements and walls are now stronger than any modern. The pilasters need only to be raised, and vaulted roofs thrown over. Then may Britons again behold Baths preferable far to modern devices. In the first volume of this work, the reader will find a complete drawing of the ruins. Your Lordship did me the favour of examining these ruins; you confessed them Roman, you preserved some of the flues and bricks belonging to the *Balnea pensilia*.

*Westminster-bridge* does honour to the Parliament that passed the law.—Shall superannuated seamen gape at Attic elegance, while princes wallow in horse ponds? shall the *general Infirmary* of the nation be stinted while Chelsea pensioners bask at their ease? why should the bounties of heaven be restrained? in the security of the *Springs*, in the restoration of the Baths, Prince and People are equally concerned.

By the munificence of the *Most Christian King* the Baths of *Bourbon* have been repaired.—  
By the munificence of the present Emperor, the *Pisan* Baths have been not only restored, but  
accom-

## DEDICATION.

accommodated to every purpose of utility and instruction.—Every Bath in Europe disgraces ours.

Bath is the *Baiae* of the *Imperial Family*, *Quality*, and *Commoners* of the three kingdoms. Foreign connections now subside. Under the auspices of the reigning Prince, the nation may look for the completion of domestic concerns. The restoration of the Baths seems, by heaven, to be reserved for the happy days of George.

Monitor for the public, I take the liberty of imploring your Lordship's intercession. His Majesty is the avowed patron of *painting*, *sculpture*, and *architecture*. Like Trajan, *superior in dignity, he descends to all the offices of familiarity*. There are few members of the legislative power strangers to the dangers of our Baths. Their reparation is the common wish. Will wishes build Baths? Your known candour, humanity, and politeness, cannot fail of endearing you to that kingdom over which you now preside. *Dublin-Castle* will receive no small addition of splendor from that hospitable ease, and openness of heart, which distinguishes the heiress of the most noble, and most illustrious *Piercy-line*. The inconveniences of our Baths are known to the inhabitants of all his Majesty's dominions. By accomplishing this domestic purpose, your Lordship has an opportunity of endearing yourself to the nation in general. Posterity will revere the restorer of their Baths.

To wish your Lordship increase of honours, or fortune were vain and unacceptable.

*Dii*

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*Dii tibi divitias dederint, artemque fruendi.*

Health, and tranquillity give true relish to all enjoyments. Virtuous and generous actions command the latter. May the former attend you to your journey's end! This is the hearty wish, and prayer of,

*(My Lord,)*

*Your Lordship's, most obliged,*

*and most obedient,*

*Humble Servant,*

*Bath, May 12, 1763.*

*A. Sutherland.*

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# C O N T E N T S

O F

## VOLUME THE FIRST.

**T**HE DEDICATION contains an *Appeal for the restoration of the Baths.*

The INTRODUCTION *exposes Vulgar Errors.*

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### **DIRECTIONS to the BINDER.**

Place the Plate of the Roman-baths between Pages 22 and 23 of the First Volume; and cut off the Leaf which has **VOLUME THE SECOND** in the Centre, and place it at the End of Vol. I.

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T H E

# I N T R O D U C T I O N.

**H**EALTH and Liberty are the greatest blessings. To the well-being of the individual health is as necessary as liberty to the public. Never, perhaps, was there a people that could boast more of liberty: never, perhaps, was the state of physic more confused.

There are fashionable prejudices, arts, and abuses just as fatal as errors experimental or practical. The principles of waters may be explored, their virtues may be ascertained; these principles and these virtues may, nevertheless, be rendered of none effect: curable disorders may be converted into incurable. The crafty few impose on the credulous many: patients and practitioners mutually conspire in deceiving each other, and in bringing disgrace on waters most salutiferous. To prevent delusion, I think it, therefore, my duty to prefix a general Chart, in which unwary strangers may view those shallows, rocks, or quicksands, on which others have suffered shipwreck. Truth is my pursuit; truth supersedes connections of every kind: "Non  
"vanum me scribendi cacoethes possidet, non  
"vulgi acclamationes ambio, nec contemptus  
"metuo. Sola mihi placet veritas."

# INTRODUCTION.

Writers  
and prac-  
titioners  
ignorant.

1. THE celebrated Frederick Hoffman spent twenty years in examining mineral waters. From experience he ventures to pronounce, "That certain springs, at particular seasons, are frequented by men who have written in an elegant manner, without the least tincture of chemical knowledge. That they have given us strange dreams of waters impregnated with gold, silver, bitumen, and a thousand other ingredients, in direct contradiction to observation and experience. That their manner of prescribing has been no less preposterous. So that water-drinking places may be said to be the principal seats of quackery.

"Physicians have acquired fortunes by directing waters of whose principles they were ignorant: destitute of sure foundation, and fluctuating in uncertainty, they have robbed waters of their salutary virtues, by mixtures of opposite natures. They have ordered compounds on compounds, insomuch that, if the patient had the good luck to escape, they knew not themselves (in such variety) to what the cure was owing, nor how to employ the same in similar cases." Hence it was, that Bacon justly called *multiplicity of medicines the child of ignorance*. Hence the meaning of Sanctorius's Aphorism, *Plebeios magis liberari a peste quam divites qui multis medicamentis utuntur*.

If we trust those who have practised at *Bath* and *Bristol*, there are hardly any ailments, which imberter the life of man, but what may be cured at either. From Cambden's days to the present, Bath-waters have been accounted *alkaline* and *nitrous*. Guidot calls Mayow a *Novel-writer*, for presuming to affirm the contrary. To use his own words: "I judge him the wisest man who takes things for granted, and who does

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"not pragmatically contradict the unanimous consent of judicious writers." Guidot, Turner, Jones, Jorden, Venner, Fuller, Randolph, Shebeare, and other pretended inquirers, ascribe principles to Bath and Bristol waters, which analysis cannot discover.

2. CHRONICAL DISORDERS are the province *Patience* of natural or mineral waters. Men labouring *necessary* under chronical disorders may judge whether or not sudden cures are to be expected. Those causes which are derived from the faults of the fluids, insensibly creep in, increase insensibly, and seldom can be cured in a hurry. Sydenham (*De Podagra*, p. 576.) says, "No man in his senses can expect, that momentary alterations wrought on the blood by medicine or diet, can perfect the cure. The whole habit must be changed, the body must be hammered out, as it were, anew." Suppose a young maid, e. g. labouring of the *green-sickness*; how flaccid and inert are all her solids, how poor her blood! Can poor blood be changed into rich in a day, can strength be given to the solids? Months are necessary. Hence it is, that Physicians (in curing chronic disorders) change the whole manner of living. Hippocrates (in his *Epidemics*, p. 529.) proposes changing the humors only, *In longis morbis solum vertere convenit*. In the cure of chronic disorders, new manner of living, new air, new faces, new amusements, and new objects, are necessary.

In chronic disorders regimens are not wantonly to be changed, even tho' they do not immediately give relief. *In longis morbis* (says Celsus in his third book, p. 112.) *non condemnetur, si quid non statim profuit*. In chronical illnesses, the sick are not to be flattered with speedy cures. Forewarned, they more chearfully bear the tœ-



dium of both disease and cure; they put more confidence in Physicians, who never deceive them with vain promises.

Hence the reason also, why chronic disorders are incurable. If, e. g. purulent ulcers consume the lungs, or the liver, who can promise cure? We see external schirrus's resist the most effectual remedies immediately applied to the part, such are we obliged to doom to the knife, to prevent their degenerating into cancer. When such hardnesses possess the viscera, who can promise a cure?

*Bathing  
dangerous.*

3. In his *Essay on Bathing in the gout*, Dr. Oliver says, "Sick people take it into their heads, that they come to *Bath* for the use of the waters only. A bleeding, a vomit, or a purge, they think sufficient preparation. They count e'en these loss of time. If other methods are proposed, they grow impatient. *They have taken physic enough at home; they come for the waters only. Their affairs will not permit them to stay.* Begin they will. Men of gross habits, and unsound viscera, stuffed with full meals, and inflamed by spirituous liquors; others emaciated, weak, and dispirited, worn down by distempers, and hectic, plunge into hot baths. By their officious acquaintances they are told, that the short stay prescribed by the Doctor can do no good, and that the temperate part can never cure them in the short time that they have to stay. Tormented with doubts, they give up their own opinions. Instead of doing what they ought, they trifle away their time in fruitless search of what they should do. They sit over boiling springs till their humours are so rarified, as to bring on faintness, sickness, vertigo's, and palpitations. Taught to believe

" that

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“ that these are the usual symptoms only of first  
 “ bathing, they repeat the same. The humors,  
 “ in general come to be resolved, the morbid  
 “ matter is set afloat in greater quantities than  
 “ nature can discharge. High burning fever,  
 “ pleurisy, perineumony, or apoplexy, ensue.  
 “ The patient dies of *improper bathing*. Or, if  
 “ they escape with their lives, finding themselves  
 “ worse, they curse the waters, and quit them  
 “ in disgust.” For farther proofs of danger, I  
 beg leave to refer the reader to Chapter xii.  
 Part I.

4. FROM theoretical notions, and ill-grounded *Theory*  
 analogy, some censure mineral waters, declaring *fallacious*.  
 them noxious in the very diseases which they spe-  
 cifically cure.

Dr. Mead, who was the patron as well as or-  
 nament of that art which he professed, argu-  
 ing from the relaxing property of simple water,  
 roundly affirms (in his *Monita & Præcepta Me-*  
*dica*) *Immersiones calidæ paralyticis omnibus nocent*.

Dreading that influence which the opinion of  
 so great a man might have on distant practition-  
 ers, as well as on despairing cripples, the Bath  
 physicians were somewhat alarmed. Dr. Sum-  
 mers, one of their number, confuted the asser-  
 tion, and received the Doctor's humble acknow-  
 legements. So far was warm bathing from be-  
 ing prejudicial, that out of 310 patients admitted  
 into the Bath Infirmary, in the first nine years,  
 there were 57 cured, much better 151. Of the  
 310 there were 43 *Haemiplegia's*, a species seldom  
 cured. Four of these were cured, much better  
 13, better 14. Dreading apoplexies, he says, *I*  
*knew some who, after bathing, died apoplectic*. Of  
 the whole number 310, there died only 12 in  
 the aforesaid space of nine years. Not one of  
 this number became apoplectic, tho' they tarry

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often a whole hour in a very hot bath, and bathe thrice a week, for a whole year, and, generally, are discharged as incurables from other hospitals.

In his *Bath Memoirs*, Dr. Pierce has recorded three *Cases*, manifest proofs of the present position.

*Examples.*

1. " Lady Ash brought her son to Bath in a  
" *Ricketty Case*. Happening to meet with Dr.  
" Highmore, an eminent physician of *Skirborne*,  
" who happened to come to the place with a  
" patient of his own, she consulted him. He  
" roundly advised her ladyship to take away the  
" child, pronouncing the very air of Bath fatal.  
" She hearkened to the advice; and as she was  
" discharging her apothecary, *Chapman*, she ac-  
" quainted him with the cause of her sudden  
" departure. The apothecary allowed that Dr.  
" Highmore was a man very eminent in his pro-  
" fession; but it was impossible that he should  
" understand the waters so well as those who  
" practised long on the spot. Harkening to  
" this advice, she sent for Dr. Pierce, who sur-  
" veying the little patient, armed with *iron-bod-*  
" *dice, half-boots, &c.* undertook, and perfected,  
" the cure.

2. " Lady-dowager Brooke was seized with a  
" *Lumbago*, or *Double Sciatica*, inasmuch that her  
" honour not only suffered violent pain, but  
" was contracted, and drawn together by it.  
" She had the advice of the most eminent phy-  
" sicians about town, Michaelthwaite, Weather-  
" by, Willis, Stubbs, &c. who all, by joint or  
" separate advice, had held her in several courses  
" of physic, without considerable amendment.  
" A *Salivation* was at length proposed, which  
" her Ladyship utterly refused; herself first  
" mentioned Bath. Her proposal was disap-  
" proved by all but the last, and fiercely declar-

" ed

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“ ed against by *Willis*, inſomuch, that he told  
 “ her plainly it would kill her: he came to  
 “ take a ſolemn leave, declaring, that ſhe  
 “ muſt blame herſelf if his prognſtic came to  
 “ paſs, but withal, packed up a peck of drugs  
 “ which ſhe never taſted, nor hardly any at  
 “ Bath. She ſtood upright in the bath the firſt  
 “ week; in a month’s time ſhe walked about  
 “ her chamber, and lived many years after in  
 “ perfect health.

3. “ Mr. Comin, of Chelmsford, was highly  
 “ ſcorbutical, aſthmatical, and hydropical. He  
 “ was ſo very ill, that he was forced to ſtop at  
 “ London, where he conſulted Dr. Browne; at  
 “ Braynford, where he conſulted Dr. Bedding-  
 “ field, and at Reading, where he conſulted  
 “ Dr. Mearde, who all told him that Bath-wa-  
 “ ter would kill him.

“ Maugre all he proceeded, and, with great  
 “ difficulty, reached the place. Beyond ex-  
 “ pectation, he recovered to a miracle, by bath-  
 “ ing and drinking.”

Were bathing dangerous, what muſt become *Bath-*  
*of our Guides?* Pierce mentions the two *Newn-guides*.  
*ams*, man and wife, who were nineſcore between  
 them; they were in the King’s Bath three hours  
 every morning, and as long at night.—Mary  
 Baker, aged 74, has been a guide to the Hot and  
 Croſs baths ſix and twenty years, and continues  
 ſtill to go in every morning, and on particular  
 occaſions, at night.—Anne Brewer, aged 80,  
 has been a guide thirty years, but has left off  
 Chriſtmas laſt only.—Anne Taylor, fourſcore  
 and upwards, was a guide forty years.

5. UNINFORMED by hiſtories of cures, and *Diſtant*  
 alarmed by deaths unexpected, diſtant practiti-  
 oners ſuſpect mineral waters as dangerous, or  
 inſignificant. Patients headſtrong follow the  
 dictates



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dictates of their own imaginations, or the unreasonable suggestions of officious gossips. Such patients have suffered. Mal-practice and ignorance have been imputed to waters. In similar disorders, distant physicians put the waters down as noxious. They condemn physicians who had the nominal care only of the patients. In future cases, they arm them with general directions, and cure them by epistolary correspondence. Without experiment or experience, they order draughts of waters fraught with daggers, or quantities so unavailing that death anticipates the cure. Patients who have experienced the judgment of family physicians, naturally believe them complete in every branch of the medical art; they trust them in the direction of waters which they never saw, in waters whose uses can only be learned from accurate analysis, confirmed by long experience.

Patients labouring under the same maladies generally compare notes. In that chapter which treats of the disorders of the *First Passages*, I have described *Miss Menzies's Case*. She told me, that she often conversed in the bath with a lady who laboured also under the same *Dry belly-ach*. "Inquiring who her physician was, she told her, the best man in the world; he writes by every packet. There are three now due, I have a letter in every one, and so, sure enough, she had; but, unluckily, she died before the wind chopped about." Nor is this attachment to family-physicians always founded on confidence. Sometimes it appears deeply tinged with avarice. For the saving of a fee, patients often throw away the whole expence, and, sometimes, their lives to the bargain. If they can but shake off the Doctor, they care not how much stuff they swallow. When they find them-

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themselves worse, i. e. when medicines imprudently continued, and waters improperly used, have produced symptoms which cannot be relieved, he has a fresh summons. What benefit can patients expect from physicians in whom they place so little confidence?

6. MEDICATED WATERS are the workman-<sup>Cures or</sup>ship of nature. We may trace her steps to a <sup>Cases best</sup>certain length; but there are many of her pro-<sup>proofs.</sup>ductions which bewilder our shallow conceptions. The invention of *Compounds* seems to have taken its rise from ignorance of *Simples*, as sportsmen charge their fowling-pieces with small shot, in hopes that, if many miss, one may hit.

Medicinal waters differ so much, that (even in the genus of *Chalybeates*) it is hardly possible to find out two springs alike in taste, weight, salts, spirits, quantity &c. There are, e. g. some *Chalybeates* which are come to that state of maturity to bear exportation, such as the *Pyrmont*, and the *Pouhon*. There are *Chalybeates* which lose their texture, become feculent, such as those of *Cleve*, the *Geronster* &c. There are *Chalybeates* highly saturated with an iron earth and ill provided in purging salts, such as those of *Tunbridge*, *Islington*, &c. There are *Chalybeates* which contain a bitter purging salt, such as those of *Scarborough*, *Epsom*, *Cheltenham* &c. As are their ingredients, so are their virtues. e. g. Those which plentifully imbibe *Iron Earth* act as a *Crocus Martis* *astringens*; internally they are beneficial in relaxed stomachs. Those which imbibe plenty of bitter purging salts are serviceable in cachexies, jaundices, dropsies, &c. Hot-waters differ from one another considerably. These differences arise from the different quantity of *Phlogiston* with which they are impregnated.

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INCIRCLED by error, prejudice, and uncertainty, how are we rationally to judge of the virtues of Bath and Bristol waters? How are we to estimate the ONE GREAT WHOLE? By their effects.

That Opium eases pain, that the Bark cures intermittents, that Mineral-waters make cripples take up their beds and walk, no-body doubts. Facts are evidences which neither craft nor malice can invalidate. Histories of diseases, observations, or cures, have been the ladders by which medical knowledge has climbed to its present perfection.

In the primitive ages of innocence and simplicity, external and accidental diseases were only regarded. Internal and spontaneous were rare, and looked upon as judgments from the Almighty. At the time of the Trojan war, ulcers and wounds were the employments of Apollo, Chiron, and Æsculapius. So little was the art of physic known, that the same Æsculapius is said to have died of a *Pleuropneumony*; after his death, his side looked black, his carcase was therefore avoided.

In after ages, the descendants of this same father of physic extended their views. They dispersed and erected themselves into societies and schools. There they kept *Registers of Diseases*, of their antecedent causes, symptoms, periods, and consequences, of what had been hurtful, and what had been useful. They collated their observations, and (from various experiments) determined those things and methods which had been found useful in practice. Thus it was that physic became a regular art. To *Tables of health* hung up in the *Temple of Æsculapius*, Hippocrates is said to have owed that amazing skill which moderns, with all their improvements, can hardly

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ly comprehend. In his books of *Epidemics*, he has set down every observation that occurred in his practice, with this view perhaps, that succeeding physicians imitating his example in particular diseases, might bring the medical art to some degrees of perfection.

To this collection of *Epidemics*, Galen added much by memorable *Observations*, partly remaining, partly lost.

Of the Arabians we find Rhasis a religious admirer of the Greeks. With him we may join Avenzoar. The rest, contenting themselves with the invention of the antients, added nothing to the improvement of the art, if we except a few *Nostrums*. By their religion they were forbidden to dissect human bodies. Thus they were prevented from investigating the latent causes of diseases.

After these the study of *Observation* was buried in an age of barbarism. Gentilis, Gradius, Placentinus, Valescus, and Gattinaria, have transmitted a few rare examples, in a horrid familiar style, smothered under the rubbish of obscure commentary.

In this third and last age we have seen the art of physic restored to its primitive simplicity and splendor. Schenckius has collected the works of Benivenius, Cardanus, Amatus, Lusitanus, Vesalius, Wierius, Coiterius, Hollerius, Valleriola, Dodonæus, Gemma, Petronius, Salius Diversus, Donatus, Forestus, Rulandus, and many more who diligently pursued the road of *Observation*. He has digested their remarks under particular diseases in his *Observationes Medicæ rariores*.

Galen (in his *Methodus-medendi*) says, *Multitudine exemplorum stupidiorum animi veluti e somno excitantur.*

Albucas



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Albacus (in his second book) says, *Plurimum arbitror prudenti medico prodesse, si quamplurima notet exempla quæ sequatur.*

Bacon (*De augmentis scientiarum*) complains heavily of the intermission of that Hippocratical industry so accurate and useful in composing histories of diseases. *Primum est intermissio diligentiae illius Hippocratis utilis admodum & accuratae cui moris erat narrativam componere Casuum circa ægrotos specialium.* He does not propose that the narrative should be so full as to take in every occurrence, nor so particular as to relate wonders only; for there are many things in the manner and circumstance of a thing new, which are not so in the genus. He who seriously applies his mind to observation, may find many things worthy of notice in things which seem to be common. *Multa enim in modo rei & circumstantiis nova sunt quæ in genere ipso nova non sunt. Qui autem ad observandum adjacet animum, ei etiam in rebus quæ vulgares videntur multa observatu digna occurrunt.*

Tulpius, Aretæus, Heister, Sydenham, Hoffman &c. have (by their observations) improved the art.

By sweeping away scholastic rubbish, Boerhaave has reconciled reason and experience.

Stahl (in his Chemical Lectures) used to charge his pupils not to suffer their fancies to be led away by the subtle reasonings of the Cartesian philosophy. He demonstrated that physic could not be rendered demonstrative, scientific, or beneficial, unless theory was confirmed by observation or experiment.

Royal Societies are noble institutions. Such was the *Edinburgh Medical-Society*. Such is that of *London*, and such are all the rest. Every practitioner has it in his power to add a mite to medical

dical knowledge. Every practitioner has not matter for a book.

Bath-waters are neither *saponaceous* nor *nitrous*. Remarkable cures have, nevertheless, been performed by the concurrence of *Soap* and *Nitre*. Who would be so hardy as to prescribe mineral waters in *Asthma's* or *Dropsies*? The reader will soon be convinced of the utility of Bath-waters in *Asthma's* and *Dropsies*.

When wonderful cures are duly ascertained, we are bound to pursue the road of observation, even in contradiction to hypothesis. Matters of fact are preferable to experiments. Truth is not the less truth because our dull senses cannot comprehend the *modus operandi*. Obstinacy proceeds from a vain opinion that the chemistry of nature ought to bend to our imperfect discoveries. The acid of Bath-water may be assisted by the natural acidity of the stomach, so as to neutralize alkaline medicines. This water manifestly decomposes soap, yet (in Mrs. Elliot's case) soap was administered to two or three ounces a day. The cure proceeded much better with soap than without.—In Mr. Lyon's case, *Nitre* was administered to six drachms a day, together with soap. In bilious disorders, I have almost constantly prescribed both these medicines with success.

Bath-water, drank at a distance, has performed cures. Thus encouraged, patients have leaped with joy to the fountain-head. There they have produced untoward symptoms. The same patients have again drank them cold, and have found their cure.

Dr. Nugent communicated a Case which unquestionably proves the position. This gentleman practised many years at Bath, now in London. Of the propriety and impropriety of Bath-waters, there lives not, perhaps, a better judge.

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“ MRS. COLBORNE, aged 53, of a scorbutic  
 “ gross habit, was subject to erysipelatous eruptions,  
 “ with a periodical hæmorrhoidal flux, on  
 “ the cessation of which, she gradually lost her  
 “ appetite, complained of rheumatic complaints,  
 “ with an indolent tumour on the right side of  
 “ the belly, by the gradual increase of which,  
 “ she was reduced to a great degree of weakness;  
 “ she threw up every thing.

“ She had tried variety of medicines. Bath-  
 “ water was at last proposed. She drank it in  
 “ London, and with considerable benefit. This  
 “ induced her to try it at the fountain, which  
 “ she did. She was soon convinced of her error.  
 “ Bath water aggravated every complaint,  
 “ she was obliged to desist. Little discouraged  
 “ by this first attempt, she waited till the Bath-  
 “ water symptoms had abated. She made a second  
 “ attempt, with the same success. She  
 “ contented herself with cold Bath-water. She  
 “ was cured.”

The volatile principle, which (in pulmonic cases) may be prejudicial, flies off, or precipitates. The fixed parts retain their strengthening qualities, may, and are used with great benefit. There is no medicine that is capable of doing mischief, but what may be made to do good, prudently administered. Witness James's *Powder*, Ward's *Drop*, Van Swieten's *Hemlock*, *Solution of Sublimate*, &c.

Dr. Jones published his *Baths Ayde* in the year 1572. “ I wish (says he) that patients would  
 “ leave a note of the commodity received, with  
 “ an account of their calling and condition, always remembering the day of their entering  
 “ the bath, and the day of their departure, with  
 “ the name of the infirmity, paying four-pence

“ to

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“ to the *poors-box* for registering the benefit received, until a physician be appointed.”

Dr. Jorden (in his book of Hot-bathing) expresses himself thus. “ I will not pretend to reckon up all the benefits which our baths produce ; but if we had a *Register* kept of the manifold cures which have been wrought by the use of our baths, it would appear of what great use they are.”

Dr. Pierce (in his preface) speaks thus. “ It hath been very often desired (and, by many wondered that it was not done, if for no other benefit than that of the city) that a catalogue of eminent cures should every year be printed.” After assigning reasons for this omission, he proceeds thus. “ Now, if instead of that, there be a *Manuel* of every one’s price and pocket (which is the chief end of this undertaking) that shall, under the head of every disease, give examples of remarkable cures, it may attain all the ends proposed. Success good or bad, let it honestly be declared ; that as the one may supply the place of a *Landmark*, the other may do the office of a *Buoy*.”

In Dr. Swinhow’s most ingenious *Inaugural Dissertation, De Thermarum Antiquitate, Contentis, & Usu*, printed at *Edinburgh*, 1752, we find one caution highly apposite to our subject. “ *Cæterum optime arti medicæ consultum foret, si historiæ quædam ægrorum, qui fontibus medicatis usi sunt, fideli calamo conscriptæ fuerint, in quibus notentur tum singulares horum casus, tum methodus bibendi unicuique magis accommoda, cæteraque omnia que ad pleniorẽ hujus præstantissimi medicinæ generis cognitionem utcunque facere possint.*”

Thus, from testimonies the most venerable, we have seen that, in all ages, *Histories of Diseases*



*eases* were looked upon as the very soul of practice. Observations are, in no particular, so necessary, as in that of Mineral Waters. Some diseases are cured by bathing, some by drinking, some require the united efforts of both. On this subject, hypothetic reasonings are, at best, precarious; experience can alone determine. With Baccius (p. 127.) we may truly say, “*Sedulo ergo fatebimur humani ingenii conjecturam non pertingere in certas rerum proprietates quæ sunt occultæ & multæ in Aquis.*” Physicians who have practised at Bath thirty or forty years ago, have left us historical cures faithfully and accurately related. We their successors, scorning the bright example, seem to content ourselves with implicit belief; we neither improve ourselves, nor inform posterity.

To the happy address of NASH, Solicitor-general of public charities, to the signal munificence of ALLEN, whose secret bounties gladden the hearts of many, as well as to the general benefactions of the three kingdoms, are we indebted for that engine wisely contrived for the ascertainment of the *nature* and *qualities* of the Waters, the *Bath General-Infirmery*.

In its œconomical administration, this charity is unexceptionable. Diseases which defy the utmost stretch of distant art, find a Bethesda here. The lame take up their beds and walk. The Baths are loaded with crutches, while the public was held in such ignorance, that the great Mead affirmed, *Immersiones calidæ paralyticis omnibus nocent*. Dr. Summers (as we have seen) undertook to vindicate the waters. In his vindication he roundly tells the President and Governors of the charity, to whom he addresses his short treatise, “The Public, as it has a right, so it expects to be informed, how far their noble intentions  
“ have

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“ have answered, that they may thereby be encouraged to partake of a blessing, the streams of which may flow upon themselves.” This challenge has not yet answered its full intention. To remedy this evil, we are naturally led to inquire into causes of indolence assigned by former writers.

When Dr. J. Henrick Schutte was employed in the discovery of the mineral waters at *Cleves*, he loudly complains of the impertinence, malevolence, and scandalous reflections of men who did their utmost to disappoint a discovery so publicly beneficial; in particular, he complains of Doctors and Apothecaries who took pains to obstruct his design, looking upon it as an obstruction to their fees, and sale of drugs. The Doctor laboured under the protection of his Prussian Majesty, a Prince who could not be staggered. Thus supported whom had he to fear?

Underhill's *Short account of Hot-well-water Cures* is the only collection that ever was published on that subject. It was printed in the year 1703. In his time, patients who reaped benefit at the Wells were wont to leave certificates of the benefit received, signed by their own hands. From this *Autography*, and from the testimonies of people residents in Bristol, then cured and alive, has this facetious author compiled his short account. On our present subject he expresses himself thus. “ The great and good God, who formed mankind all of the same clay, afflicts all with like diseases. To show forth his mercy, he freely bestows medicated waters, and puts it in the hearts of Princes, and many of the first Quality, to order their names and diseases, for the sake of the public, to be exposed in print, as we see in Guidot's System

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“ De

“ *De Thermis Britannicis*, and Pierce’s *Bath Memoirs*. The like is performed by other Mineral-Water-Writers. There are some notwithstanding who are scrupulous in having their *Cases* published, mistaking their *honour* for their *humour*. The good man, *quantum in se*, will not let his fellow-creatures languish for want of putting to his helpful hand, he will rather benefit all, he loves his neighbour as himself.”

*Stultorum incurata pudor malus ulcera sanat.*

*Useful  
caution.*

PATIENTS never ought to come to water-drinking places without historical deductions of their *Cases*. Family Physicians are best judges of particular idiosyncrasies and constitutions. One bears evacuations of all sorts, another is injured by the least. Opiates are cordials to some, they destroy others. The same may be said of mercurials, and every other active medicine. The whisper of a family-nurse is preferable to the first thoughts of a *Freewen*. Physic is a rational, deliberate, uncertain art. *Ars longa, vita brevis.*

*Confused  
state of  
Physic, its  
cause and  
effects.*

7. So much for medical abuses. There are fashionable arts no less fatal. In countries regulated by *Police*, the practice of Physic is duly administered. Physicians fees are regulated by the state; the meanest tradesman begins and ends with the Doctor. The nearest is generally employed, because he naturally is supposed to give the best attendance. In Amsterdam there are, perhaps, one hundred Physicians, every one of which gets a competent maintenance.

While national honour was the characteristic of this country, while country gentlemen lived at their country-seats, custom acted as powerfully here, as the laws of police do in other countries.

Family

## INTRODUCTION.

Family Physicians read and thought for their patients; they were well acquainted with the constitutions even of children and servants. Our grandfathers knew no other diseases but those which proceeded from exercise, jollity, or old-age; they lived like men; death, to them, had no terrors. England was then no less noted for able Lawyers, Physicians, and Divines. The nation was, perhaps, no less honest, healthy, or religious.

While marriage was more fashionable, while domestic happiness was the lot of almost every pair, husbands and wives presided in their different spheres. In œconomical concerns husbands yielded to their spouses. In matters of judgment, literature, and science, they took the liberty to direct.

With their manners the sexes seem to have changed their natures. Succession of amusements seems now to be the reigning phrensy. Manly sports, and social joys are ill exchanged for tainted air, sedan-chairs, card-tables, and tea-drinking. Young men, happy in their constitutions, consume their present stock of health in Quacking, and preventing diseases, *In secunda valetudine adversæ præsidia consumunt*, as Celsus elegantly expresses it. Evacuations give rise to cachexies; the best constitutions become susceptible of trifling liberties. Nature thus misled, the body forgets the calls of nature. Loss of appetite, drowsiness, pains, lassitude, indigestion, flatulence, profuse sweats, and all the other symptoms of gradual repletion appear. Soul and body become enervated; men complain of disorders which their grandmothers never knew.—In matters of judgment, literature, and science, women influence the men.



## INTRODUCTION.

At public places the world is all masquerade. Every disease, every member of the body, has its particular professor. The city swarms with *Oculists, Aurarists, Dentists, Venerialists, Nostrumites, &c.* Fellows who drew teeth in *Paris*, ride, with us, in their chariots, and are paid by purses, while regulars run in debt to their taylor. In country settlements, every man's merit is stamped on his works. Physicians are honoured in their dirty boots. Strangers are preferred to relations. Praise or obloquy are unavailing, and therefore unpractised. In a constant flux and reflux, characters are known only by retail. Learning, modesty, and parts are of very little use. Ignorants are, in an instant, transformed into *Eminents*; dulness is imputed to thinking; imperfections are converted into topics of praise. Let the favourite but brew pleasantly, no matter for the intention; let him but cringe, or learn the art of ruling patients by their fears, he cannot miss of success.

Every calling has its stated returns of rest and duty; the fashionable Physician is the slave of fashion, caprice, hurry, and avarice. Men hampered with engagements, call for pen and ink, and boldly decree in cases which would have puzzled Boerhaave for a month. Thousands have died by believing in *Radcliff*, who might have been saved in a country village. I never hear of Doctors tiring two sets of horses, but it puts me in mind of an anecdote applicable to the purpose:

Following the Physician of the *Charité Hospital* at *Paris*, one day, in his rounds, he stopped at the foot of a couch. In one breath he rapped out the usual questions, *Tirez votre langue, Toussez vous? Allez vous a la selle?* Without looking into the bed, or waiting for an answer, over his shoulder

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shoulder he calls to the friar who trotted after him with the prescription-book, *Purgez lé*. Loud enough to be over-heard, the good father whispered him in the ear, *Monsieur, il est mort*. The Doctor, shrugging up his shoulders, trotted on, with a *Diable! Passons!*

In this country Apothecaries are often forced to usurp the province of Physicians. On many occasions have I knowen them lament the cruel necessity; on many occasions have I knowen them press the attendance of Physicians, and in vain. Physicians are rarely called until nature is exhausted. For doing nothing they are sometimes paid profusely. At other times they are discharged just when they have it in their power to save. The very manner of seeing has an elemosinary air. Every man versant in practice can furnish himself with instances of Physicians losing their patients, and of patients losing their lives by the change. Was I not afraid of renewing sorrow, I could produce not a few.

At water-drinking places, Physicians, Surgeons, and Apothecaries are served at the expence of their brethren. So are people of every art and calling. While the two play-houses subsisted at Bath, people of fashion differed about fellows void of merit.

Nothing so common as to puff away Apothecaries for keeping the best drugs. This, too often, is an insidious pretence. The truth is, Apothecaries are under no sort of temptation to sophisticate. Their uncommon profits are security sufficient for their honesty. Those who have much business, and those who have less, keep drugs equally fresh; they commission according to their consumption.

To corruption, the parent of ignorance, and inattention, are we indebted for the present con-

## INTRODUCTION.

fusion of Physic, with many other *Vulgar Errors*, Persons who live in continual dread of death, confide in men who (by their education) can neither foresee danger, nor avert it. Our very understandings seem to be corrupted, as well as our manners. Names, forms, and appearances usurp the place of realities.

As Pliny said of the state of Physic in his days, so may we truly say of ours. “Nulla lex  
“ quae puniat inscitiam, capitale nullum exem-  
“ plum vindictae, discunt periculis nostris, ex-  
“ perimenta per mortes agunt.”

Nor are these abuses mere creatures of fancy. Baccius, Hoffman, Pierce, Baynard, Oliver, and almost every other mineral-water writer, seem to have been sensible of abuses peculiar to water-drinking places. To facts I appeal.

“ Where (as Baynard observes) Physicians  
“ gallop over patients, and ride post to be rich,  
“ there haste admits not observation. The  
“ sick man is lost through precipitation. But  
“ this is no detriment to the Doctor; for, while  
“ they die, new game springs up; whilst there  
“ is intemperance in the world, there will be  
“ disease.— Where Physicians, by policy or  
“ party, have gained their point, and set up  
“ their standards in the opinions of fools; where  
“ spaniels range through the city to spring  
“ game, and *Tray* is rewarded with the offals  
“ of the quarry, there the welfare of the patient  
“ is but the collateral of their care. Fools are  
“ more dangerous than knaves. Doctor *Wax*  
“ takes any impression, says always as dame or  
“ nurse says, and becomes all things to all, that  
“ he may gain many. Such fellows resemble  
“ *Hudibras's* dagger, good for every-thing;  
“ they stick at nothing to amass pelf.”

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In the *Conclusion* to his *Bath Memoirs*, Dr. Pierce expresses himself thus. "Secondly, As the Spaniard says, *Ragio de Stado*, reason of state is a very great knave; so may every-one say that interest and self-endedness is not very honest. Every lodging-house stands in the best air, and nearest the best bath, by the report of him that keeps it. The best Physician is he who gives advice for nothing, or helps to lodgers. If you ask an Apothecary, he certainly is the best who orders most Physic. Therefore it would be prudent to be directed to your Physician before you come, and not to heed what is said against him, or for another. Persons who offer advice may appear disinterested when they are not always so."

"*Placebo* never saw a professor in his chair, nor never made up a Doctor's prescription. Without knowledge chemical or practical, he was said to understand the waters *better than them all*. Without medical education of any sort, he had the sole care of three-fourths of the people of fashion. The Doctors had time for their airings. Pestles lay silent in their mortars. He pretended not to call for pen and ink, as some folks do. He boiled his nostrums over the patient's chamber-fire; with his own hand, he carefully divided the doses. The family Apothecary had the selling of the phials and corks, bladders and pipes. He carried thumb-bottles in his pocket; his drops and his lancet were ready on all occasions. He visited any-body's patient; he was welcome every-where; he delivered the mothers, and inoculated the children. Calling one morning to visit a Lady, I found him lolling on the bedstead. Asking her how she did, she answered, *Pure and well, my old friend*



## INTRODUCTION.

“ *the Doctor has been just treating me with some of*  
 “ *his good drops.* I did not think it prudent  
 “ just then to thank him; that might have look-  
 “ ed like dividing the credit of the cure, for she  
 “ was out of danger; nor do I now care to  
 “ mention his name, that might renew his con-  
 “ fusion. His wig was deeper than mine by  
 “ two curls, he corresponded with the most  
 “ *eminent*, as he reported they prescribed.  
 “ Was it any wonder that *Placebo* grew in  
 “ grace?”

THUS having cleared away the rubbish, I proceed to unfold my Plan.

8. In a former rude *Essay*, I analysed the Bristol Waters, I interspersed some observations on those of Bath. Literally to reprint the same crudities on subjects improveable favours of indolence, not to say worse. I have therefore enlarged my plan. I have divided my work into seven parts.

*Plan of  
the work.*

I. The first presents a Comparative View of Baths antient and modern, their antiquity, construction, apurtenances, manner of operation, use and abuse, origin of springs, and cause of heat.

II. The second contains the Natural Histories and Analysis of Bath and Bristol Waters, with their general virtues.

III. The third contains Rational Deductions of those diseases which fall under the power of Bath-waters, with remarkable Cures.

IV. The fourth contains Rational Deductions of those Diseases which fall under the power of Bristol-waters, with remarkable Cures.

V. The fifth endeavours to revive the antient practice of sea voyages in Medicine, with remarkable Cures.

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V. The sixth contains a Rational Inquiry into the nature of Drains, Issues, or Setons, with remarkable Cures.

VII. The seventh and last lays down Rules of Diet, Exercise, Sleep, Passions, Preparation, &c.

The Appendix contains an Abstract of a pamphlet formerly published on the subject of *Plaistering in the Small Pox*.

To conclude; In the ballance of reason I have *Author's* weighed the opinions of former Inquirers. The *Apology* knowledge of Mineral Waters can never be acquired by any other method than that of analysis confirmed by experience. This is the opinion of the great Boyle. I have raised the frame of a fabric which future experience may embellish. That apology which the Marquis de Santa Cruz makes for his *Maximes militaires et politiques*, may very well serve for mine. “ Je suis un architecte qui ai ramassé des matériaux de divers  
“ endroits; j’ai pris d’autrui la pierre, et le bois;  
“ mais la forme de l’edifice est toute de moi.  
“ L’ouvrage des *Araignées* n’est pas plus estimable, parce qu’elles produissent leur toile d’elles memes, ni le mien n’est pas plus méprisable parce qu’ a l’exemple des *Abeilles*, je tire  
“ le suc de fleurs étrangers.”

PART

# INTRODUCTION

The first part of the book is devoted to a general survey of the subject. It is divided into three chapters. The first chapter is devoted to a general survey of the subject. The second chapter is devoted to a general survey of the subject. The third chapter is devoted to a general survey of the subject.

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# PART I.

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## A COMPARATIVE VIEW OF BATHS ANTIENT and MODERN.

### CHAP. I.

#### *Of Baths in general.*

**W**E lightly esteem the gifts of nature because they are common. While we puzzle our brains about butter-flies, we know but little of the properties of *Water*. Water is an universal medicine, it answers every curatory indication in diseases acute as well as chronical. To other medicines it serves as a vehicle; it dilutes viscidities, not only in the first passages, but in the remotest capillary vessels, it dissolves acrid salts, softens rigid fibres, relaxes those which are contracted, alleviates pain, and quiets stimulus.

Mineral-waters add a gentle stimulus to the stomach and intestines; thus do they sooner find admittance



## BATHS ANTIENT and MODERN.

admittance into the innermost recesses of the body. The vessels acquire strength, and thus disburthen themselves of their contents by the outlets of urine, sweat, stool, &c.

Mineral-water salts are dissolved by the hand of nature; they require not that large portion of the fluid which salts of the same genus call for. This may be the reason why natural purging-waters mix sooner with the blood, and sooner produce their effects. Those calcarious earths which mix with some waters, no sooner meet with acidities of the first passages, than they produce a sort of *Magnesia*, which cleanses the body.

Bathing and drinking mutually conspire in combating diseases the most stubborn, and restoring health.

----- *alterius sic*  
*Altera possit opem res, et conspirat amice.*

FROM necessity, the parent of art, we may deduce the first use of Water. In the days of primitive simplicity men made use of those things which nature poured forth, with little or no preparation. As communities and societies came to be established, nature's bounties were improved by art. Water was used at first, for allaying thirst, or washing away sweat and dirt. In process of time, Water came to be used medicinally.

The *Quirites* and the *Sabines* inured their bodies to labour and exercise. Hunting and agriculture were the studies of these primitive heroes. Q. Cincinnatus, C. Fabricius, and C. Dentatus, were called from the plough to the Dictatorship. From public honours and warfare they naturally returned to rural exercises, *running, jumping, wrestling, boxing, swimming, &c.* This was the life  
of

## BATHS ANTIENT and MODERN.

of the antient Latins before the building of the city, as Virgil tells us in his seventh *Aeneid*.

*Ante urbem pueri, & primævo flore juventus,  
Exercentur equis, domitantque in pulvere currus,  
Aut acres tendunt arcus, aut lenta lacertis,  
Spicula contorquent, cursuque, ietuque lacesunt.*

Inured to such exercises, their bodies were loosely attired, their limbs were covered with dust and sweat; they necessarily required washing. Noble citizens were, in time, ashamed to wash themselves in the muddy river. Baths were prepared after the manner of the *Asiatics* and *Greeks*, not only for cleanliness, but for recreation also. Luxury increasing, waters and rivers were led to the city. The *Aqua Appia* was brought from the *Tusculanum* in the year of the city 443. The Tyber water was neither used for drinking nor bathing. Simple Baths were built. Till the days of Augustus architecture advanced but slowly. Content with rural exercises, or the Campus Martius, young men washed themselves only in the Baths. These Baths were chiefly built near some public place of exercise. This was their primary intention. Agrippa built a Bath near the Campus Martius. The Neronian Baths were built near the Circus Agonalis. T. Vespasian, after he had dedicated the Amphitheatre, ordered Baths to be built for the commodity of those who exercised themselves therein. As the majesty of the empire increased, so did architecture, *more Græcorum Palestræ cum Thermis fuere conjunctæ*. Baths began to be multiplied; young men forsook their rural exercises; old men, consulars, tradesmen, and matrons all frequented the Baths on stated days; *pro veteri instituto, ac studio virium, pro munditia, pro sanitate, atque omni cura corporum*.

*Artificial  
Baths in-  
troduced.*

Among

## BATHS ANTIENT and MODERN.

*Baths  
schools.*

Among the Romans, the Baths were accommodated with such convenience and elegance, that health was not only preserved, but, by that pleasure which attended bathing, the youth were allured to the *Gymnasia* or schools, where, by daily exercise, they hardened and prepared their bodies for the toils of war. Nor were there any other colleges, or seminaries of learning. Hence we read *Gymnasia pro Balneis*, ἀπό το γυμναζιον, i. e. *exercere*, quæ Latinis *Ludi* dicti, *Ludus Pilæ*, *Ludus Palestræ*, *Ludus literarum*. At the time of the Roman *Lustra*, competitors assembled from all parts. Another advantage accrued also to the public. Those who began to be lukewarm in the cause of virtue, were (by constant employment) weaned from their vices. Thus idleness, the parent of all evils, was banished, as were seditions and popular commotions.

*Separate  
baths for  
the sexes.*

EVEN in the times of general licentiousness, female modesty continued. Women mixed not then in the public baths with the men. Hence that number of private baths. Nay, there were public baths for women, viz. the *Agrippinæ*, the *Olympiades*, the *Ampelides*, and the *Priscillanæ*. Plutarch, to the praise of Cato the Censor, says, he never could be prevailed on to enter the same bath with his own son. Valerius Max. tells us, that, according to the venerable institutions of antiquity, the father never bathed with the son when he came to be advanced to the age of puberty, nor the father-in-law with the son-in-law; because, between such connections, it was accounted indecent to strip in any sacred place.

*Baths free.*

Public Baths were the property of the public, free to all. Princes accounted it a common pleasure that they could go into the baths gratis. Patricians and plebeians mingled together, the first comer chose his place. There were bells which

## BATHS ANTIENT and MODERN. 3

which called the people to the baths at stated hours, according to Martial.

*Redde pilam, sonates. Thermarum, ludere pergis?  
Virgine vis sola lotus abire domum.*

Of Physicians, Hippocrates may be said to be *Baths used* the first who applied the baths to medical use. *medicinal-ly.* After the death of this our most rational founder, Greece came to be daily stored with the writings of wise men. In the days of M. Pompeius, when Asclepiades sagaciously expunged the whole Roman Pharmacopœia, he left the Baths. To the great joy of the people he improved them by introducing the *Balnea pensilia*. After him Baths were more or less in fashion. Like every other human institution, they had their partizans; they also had their enemies. Universally, however, they were reckoned among the cardinal remedies. In the days of Augustus, Corn. Celsus made a collection of the writings of Cleophrantus on bathing in *Fevers*. Musa, Andromachus, Archigenes, Rufus and Erasistratus improved the use of bathing. Galen, who may be said to have brought the art of Physic to perfection, not only accommodated bathing to the purposes of elegance, but he proved it to be the only remedy in certain sort of fevers.

While the senate remained the *Thermæ* were *Baths per- useful institutions.* When liberty came to be *verted.* swallowed up in tyranny, Baths increased in number and size. The Emperors made use of Baths as implements of tyranny. While they cajoled a deluded people, they did them the honour to mix with them in the Baths. The temples were, at this time, but small; every man contented himself with his own *Lares*, or household gods. The people assembled in the Baths, hence called *Xenodochia*—Imperial pride was, in no instance, so



*Luxury of  
Baths.*

so conspicuous as in the stately structure of their Baths. Agrippa adorned his Baths with tessellated pavements and enamel; the floors were made of glass. Nero, Alexander Severus, Commodus, Antonius; Aurelius, Dioclesian, Constantius; Appius Claudius, and almost all the emperors, raised most sumptuous Baths, which bore the names of their several founders. Nor was this fury for Baths confined to Rome only. Baths were erected in every province that submitted to the Roman yoke, *Calabria, Sicily, Afcalon, Damascus, Ptolemais, Germany, Spain, Gaul, and Britain* had Baths venerable even in their ruins. *Multe occurrunt apud auctores Thermarum memorie in Germania, Gallia, & Britannia, ac longe plura ipsarum vestigia visuntur in Italia, in quibus vidi sæpius per inscitiam etiam doctos viros obstupescere,* says Baccius, p. 369.

*Baths the  
chief re-  
medies.*

While the Roman Empire subsisted, Baths were the *munera Divum*, the themes of Historians and Poets, the sacred care of the republic, and the Emperors. For six hundred years there were hardly any other medical aids known at Rome but Baths, and some few empirical nostrums, as we learn from Pliny, lib. xxix. cap. i. The use of drugs was, at first, but simple, and rare. With tools which every farm produced, Hippocrates performed cures which disgrace the Pharmacopœas of this day. By the rational use of Baths, the Antients anticipated and prevented diseases. Their *belebore, elaterium, scammony, and colocynth* were conjured up in inveterate diseases only. Ring-worms, scurvy, leprosy, itch, and those other foul eruptions so common among us, were then hardly known. Pliny tells us, that the *Lichen* or *Ring-worm* was not known at Rome till the days of Tiberius, and then introduced by the conversation of filthy foreigners, *ab alieni-*

## BATHS ANTIENT and MODERN.

*genis incultioris vitæ adlata.* That there were but few of the antients who knew the Gout we have Pliny's word. For driving superfluous humours from the center to the circumference, for prevention and cure of diseases, Bathing was the specific. By temperance, exercise, and bathing, the very seeds of diseases were eliminated. *Cæterum rari sunt morbi, sive communes toto corpori, sive particulas ipsas privatim occupantes, quos opportuna earundem administratio non persanet* says Baccius, p. 407. In the same page he sums up the general opinion of Antiquity. *Hæ enim sunt Balnei in universum operationes. Humectat imprimis, et calefacit, blandissime; mox aperit, lenit, attenuat, digerit, revellit, maxime callidius. Urinas ac alvum ciet; sudores, ac halitus insensibiles excitat. Dolores mitigat, somnum conciliat, bonas coctiones molitur, ac vires corroborat. Penes has operationes hoc balnei genus ad singulares multas ægitudines est utile, ut ex veterum auctoritate, ac eorum quos imitamur præcipue Galenum, Paulum atque Aetium plane constabit.*

The Roman Baths were constructed on the model of the Grecian, as we learn from Vitruvius, and also from Varro, in his book *De antiquis nominibus*.

Natural Baths are very antient in Italy. Lib. *Artificial* xxxi. cap. 6. Pliny observes, that hot natural Baths. Baths were in frequent use. The most celebrated were the *Baiana, Puteoleana, Albulana, Pisana*. There were memorable hot Baths in *Spain, Gaul, and Britain*. While artificial Baths continued to be decorated with all the elegances of art, medicated waters were seldom mentioned, unless (as at *Baia, Viterbo, &c.*) they happened to spring up at places accommodated with every implement of voluptuousness. When, by the

D

irruption

## BATHS ANTIENT and MODERN.

irruption of barbarians, the imperial Baths were demolished, necessity drove men to natural hot springs. Out of the ashes of Roman science, medical knowledge came at last to raise up its head. Natural Baths came to be explored. Galen (*Comp. Med. cap. 1.*) says, *In medicatarum aquarum balneis, vel ad voluptatem lavari, vel auxilii gratia, quæ communissima est. Quippe nos cessata illa lautitia Thermarum, auxilii gratia duntaxat his balneis utimur.* In his book *De sanitate tuenda*, this venerable author commends them for the purposes of warming, drying, and evacuating, *Ad calfaciendum imprimis, atque exsiccandum, omnes enim aquæ medicamentosæ plane siccant. Ad evacuandum, nam digerendo, universum vacuant corpus, præcipue vero si balneum qualitate sulphurea sit.* For the purpose of softening, Paulus and Ætius commend bituminous waters, *in nervosis partibus frigesactis, ac induratis. Et quædam ad confortandum non solum extrinsecas partes, sed & viscera imbecilia, quod ferratæ præstant præ ceteris.*

*Baths decline.*

*Baths revive.*

At the declension of the Roman empire, every useful art fell to the ground; amongst other calamities, the knowledge of natural baths was lost; they were used only as momentary refuges, and that in a confused unskilful manner. Some hundred years after, this happy reformation began to dawn in the writings of the *Arabians*, in those of their chief Avicenna particularly. Nor were there wanting men in *Italy* who consulted the doctrine of Bathing, then almost obliterated. Of authors who studied the reparation of the Baths, there are not a few Physicians and men of other professions, whose writings ought not to be neglected, Montagnana, Guianerus, Savonarola, Ugulinus, Gentilis, Franciottus, Dondius, Nic. Massa, &c. Of those who improved the devices of

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## BATHS ANTIENT and MODERN.

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of their predeceffors, Savonarola and Montagnana are the firft.

About the time of the pontificate of Sextus *Italian ignorance.* Quintus, the Italian Baths fell under the cenfure of that aphorifm, *Extremis morbis, extrema remedia.* Aroufed by national fhame, Andreas Baccius, Phyfician to his Holinefs, thought it not only injurious to the health of individuals, but moft unworthy alfo of the faculty to abandon fo falutary and fo copious a field of medical help to the ignorant. He nobly refolves to reftore the practice of Bathing, “Cum ergo, in tanta fcientiarum claritate, impium fane mihi vifum eft pro communi falute, indigniffimum vero tantæ facultati, falubrem adeo partem, ac veluti ampliffimam remediorum provinciam occupandam ignaris, ac deripiendam impune. Hoc itaque confilio profeffus equidem penes Peripateticorum & Galeni integram tradere Balneorum docttrinam.”

In the year 1622, Baccius published his mafter-piece *De Thermis.* In other countries this book has produced admirable effects. Baths natural and artificial are rationally appropriated to their proper ufes, not in extreme, but incipient affections.

With us, Baths ftill continue *extrema remedia.*

Baccius accuses the Phyficians of his day of negligence or ignorance in the doctrine of Bathing. *Quam partem miror nostros feu negligentia, feu ignorantia omiffiffe,* p. 97. To the various ailments of mankind, Providence has appropriated particular waters. Simple warm water cools. Hot mineral waters brace.

Hippocrates, Galen, Celfus, Rhafis, Oribafius, and many other Phyficians, made it their common practice to cure fevers of all forts by arti-



## BATHS ANTIENT and MODERN.

ficial Baths. In chronic Diseases, Paulus Ægineta recommends warm Bathing *tantum remedium optimum, tutissimum, et omnibus fere idoneum*. Prosper Alpinus recommends Bathing, *tum ad valetudinem tuendam, tum ad morbos sanandos*. These are authorities which will be held in reverence when our very names come to be forgotten. There are numbers of diseases which may be cured by water artificially heated. Those who consign their patients promiscuously to Bath, seem to be ignorant of the nature of diseases, as well as to the properties of waters.

*British ignorance.*

The Kingdom of Great Britain contains not one artificial Bath worthy so to be called. In the metropolis there are *Bagnio's*, where people may cup, bathe, or sweat. In *Cholics* and other disorders patients are accidentally soaked in tubs. To the rational doctrine of *Bathing* practice pronounces us strangers; one would be apt to think that Baccius's book had never crossed the seas. Fashion prevails in Physic as it does in other things. In Dover's days, *Quicksilver* was the panacea. *Tar-water* had its run. In the dull beaten track of *Saline-draughts*, and *Pearl-juleps*, we jog on. If nature performs the cure, the Doctor has the credit.

Britain once boasted its Baths. What these were will be seen in the next chapter.

What our Baths now are may be guessed by the following sketch.

*Condition of the Baths at Bath.*

By encroachments and other abuses, as well as by the ground's being considerably raised above the level of the springs, the avenues which lead to the *Slips* are dark narrow passages, less conspicuous far than the entrances to the meanest inns. The slips resemble rather cells for the dead, than dressing-rooms for the living. Their walls and floors are composed of the same

## BATHS ANTIENT and MODERN.

II

materials, cold stone, eternally sweating with the steam of the baths, dark as dungeons, and, in their present condition, incapable of being warmed. From these dressing-rooms we descend by narrow steps into open unseemly ponds. As Pliny the younger said of old of the bath at *Claudiopolis*, so may we truly say of ours, "The ædifice" seems rather sunk into the earth, than raised "above the ground." Irregular walls incrust-ed with white-washing of lime, freestone-sand, and the steam of hot water, now bound our cisterns, exposed to wind and rain, as well as to the gaping of every footman. The neighbouring houses not only bound their walls, but cover the slips, and hang over the baths. In as many words, our baths answer exactly that character which Baccius gives of the Italian baths of his days, *Tum stupharum ipsarum vitio quæ angustæ ac tenebrosæ, carent omni commoditate, et omni delicia, ac noxiæ id circo multis, invisæ potius quam gratæ et utiles.*

As are our Baths so are our improvements, *Modern* Pierce, Baynard, and Guidot, practised at Bath *improve-* long ago. They have left behind them well *ments.* authenticated cures of Dropsies, Asthmas, and other Diseases, now almost unattempted. The *Laedentia* of mineral-waters are equally instructing with the *Juvantia*. Nor are failures constant objections. In the hands of some, mineral-waters (like other tools) are remedies divine; in the hands of others they are edge-tools.

Animated by Baccius's bright example, it is my purpose to inquire into the origin, progress, use, and practise of Bathing. "Quamobrem" volentes ad nostrarum lavationum regulam "antiquum *Thermarum* usum revocare, operæ "pretium erit Romanarum instituta prosequi. "In quibus quæ prima introducendarum ratio,

## BATHS ANTIENT and MODERN.

“ordo, quis usus, et quæ tandem in iis medicinae pars extiterit pars percurramus. *Bacc. De Therm.* p. 365.” Thus far of Bathing in general, we now proceed to particulars.

## C H A P. II.

*Of the Antiquity of Baths.*

*Eastern  
nations.*

1. **A**MONG the Syrians, Medes, Persians, and other inhabitants of the East, addicted to voluptuousness, certain it is that Baths were in use. Xenophon describing the effeminate manners of the Asiatics, forgets not their Cup-bearers, Bathers, and Ganymedes; he hints that this effeminacy descended from the Medes to the Persians, *Cyropaed. lib. viii. 55, 56.* Plutarch tells us that Alexander the Great was astonished at the sight of Darius's Baths, *Vit. Alex. Magn.*

2. Bochartus thinks the Arabic word *bbemin* denotes hot water, *Geogr. sacr. part. poster. lib. cap. 16.* The *bbamei de Tiberia* is translated *Tiberias's hot water*, so the *bbamath de Gadar* is called the *calidum* or *bath of Gadar*, *Ibid. et Reland. Palæstin. p. 301, 302.* Josephus makes mention of the baths of *Tiberias* and *Callirhoe*, *Antiq. Judaic. lib. xvi. cap. 3. & de Bell. Judaic. cap. 21. 6.* Ammianus Marcellinus speaks plainly of the Baths of *Palæstine*, *lib. xiv.*

*Greeks.*

3. The antiquity of baths appears from the most antient Greek writers. Homer mentions hot baths in various places. Andromache orders hot water to be got ready for Hector against his return from battle, *Iliad xxii. 444.* Nestor's maid servant prepares hot water, *ibid. xiv. 16.* Alcinous's wife prepares warm water for Ulysses, *Odyss. viii. 451.* Pindar mentions the *Θερμὰ Νυμφῶν λούτρα*, *Olymp. xii. 27,* so does Diodorus Siculus, *lib. x. 23.*

4. That

4. That baths were in use in the days of Hippocrates we learn from his writings, or from writings which pass by his name. *Lib. ii. De Dieta*, §. 35. Their effects are mentioned in his book *De Affectionibus*, Τὸ αὐτὸν τὸ θερμὸν, τὸ μὲν μετρίον, μαλασσει τὸ σῶμα καὶ αὐξεῖ, *Corpus molliet et auget*. In his *Epidemics*, *lib. v. §. 4.* we have the case of a person cured of an universal itching by the hot waters of *Melus*.

5. In the days of Plato and Aristotle baths were in use. Plato commends hot bathing for the cure of diseases, as well as for refreshing the body after labour, *De legibus lib. vi.* Speaking of the Atlantic island, now under water, he mentions baths open as well as covered, some for men, others for women, others for beasts. *In Crit.* Aristotle mentions baths in Magnesia. He mentions the heavy fines which were imposed on thieves who stole the cloaths of the bathers, *Problemata*. §. xxiv. *Quaest.* 16, 17. *Ibid.* §. xxix. *Quaest.* 14.

6. Strabo mentions the Phazemonitan baths, in Pontus, *Geogr. lib. xii.* He speaks of the Sestian baths near Massilia, *lib. iv.* He says Thermopylae took its name from the neighbouring baths. He mentions hot baths at *Naples*, *Senneffa*, *Chalcis*, and other places, not inferior in virtue to those of *Baiæ*, *lib. v.* Athenaeus mentions several hot baths in Cilicia, Troas, Asia, Phrygia, and other countries, *Deipnosoph. lib. ii. & lib. xii.* Dionysius Halicarn. mentions some Italian baths which served for pleasure, others for the cure of chronic Diseases. *Antiq. Romanar. lib. i.*

7. As riches, arts, and luxury naturally follow *Romans.* empire, so doubtless the custom of bathing came from the Greeks to the Romans. The terms are all Greek as Baccius informs us in



## BATHS ANTIENT and MODERN.

his book *De Thermis*, lib. vii. cap. 1. *Thermæ, Laconica, Hypocausta, &c.* The Agrippan baths are mentioned by Pliny, *Hist. Nat. lib. xxvi. cap. 25.* Those of Trajan and Severus, *Lamprid. cap. 17.* Dioclesian's by Aurel. Victor, cap. 40. n. 27. and Constantine's *Spartian, cap. 19.* These and other principal Baths are particularly mentioned in *Pitiscus's Lexicon Antiquitat. Romanar. vol. ii. p. 951—955.* Seneca and Ammianus Marcellinus mention public baths built for the people at great expence not only at Rome, but in those provinces which were subject to Rome, as appears from their ruins, and from inscriptions recorded by Gruterus, *Inscript. operum et locor. publicor. et alibi passim.* The Baia were celebrated by Horace, Juvenal, Martial, &c.

*Nullus in orbe sinus Baiis præluet amænis.  
Janua Baiarum est, & gratum littus amæni  
Secessus*—————

8. Pliny mentions many baths with their virtues, *lib. xxi. cap. 2.* The *Thermæ Calirhoenses* *Tiberienses*que in Palæstine, were famous, King Herod used them in great danger, *Joseph. Antiq. lib. xviii. cap. 6.*

*Buxton  
Baths.*

9. That the *Buxton Baths* were known to the Romans, we may guess by the leaden pipes found under ground, and by the Roman cauleway.

10. Celsus commends hot and cold bathing, *lib. i. cap. 3.* He expatiates on the manner of using hot baths after exercise, *ibid. cap. 3.* Plutarch commends hot baths; he seems no friend to cold baths, *Lib. de præcept. salubr.*

11. Aretæus prescribes the manner of using hot baths, *Wigan Dissertat. de Aretæi ætate.*

12. Galen's practice abounds with the good effects of baths, *Vid. Comment. in Aphorism Hippocrat.*

*pocrat. lib. iv. Aphor. 2. Vid. De usu partium, lib. i. cap. 3. Vide De sanitate tuenda, lib. iii. cap. 5. Linacro interpret. Vide etiam lib. De Temperament. cap. 2. &c.*

13. Galen's successors Cælius Aurelianus, Oribasius, Alexander Trallianus, and Paulus Ægineta recommend baths, *tanquam remedia optima, tutissima, et omnibus fere idonea.*

14. That hot baths were known to the Ara-<sup>Arabians.</sup> bians, we learn from Avicenna, *Canon. lib. iii. sen. xvi. tract. iv. cap. 10. & lib. i. sen. ii. doctrin. ii. cap. 19.* Actuarius dwells much on the use and virtues of hot baths, *Method. med. lib. iii. cap. 10.* Prosper Alpinus tells us that the Ægyptians made use of hot baths for cleanliness, and health, *De medicin. Ægyptior. lib. iii. cap. 14, 15, 17, 19.* When Alexandria was sacked by Amron, A. D. 640, there were said to have been 4000 baths found, *Friend. Hist. med.*

#### RUINS discovered at Bath.

15. To search deeper into antient Antiquity <sup>Roman</sup> were needless. Ocular demonstration affords <sup>ruins at</sup> proofs sufficient of Roman magnificence and <sup>Bath.</sup> contrivance.

Ptolomy mentions hot mineral waters by the appellation of *ῥεστα θερμα*; and, by determining the very latitude, can mean none other than those of Bath.

Solinus (in his *Poly-historia*, describing Britain) says *Fontesque callidi, opiparo exculpti apparatu, ad usus mortalium.*

Cambden thinks it unquestionable, "That the springs thus accommodated were those of Bath."

The

## BATHS ANTIENT and MODERN.

The fame of our baths was fuch, that (by the *Molmutine Larvs*), the very roads which led to them were places of refuge.

To Dunwallo King of Cornwall we may afcribe that road which leads through Devonfhire and Somerfetfhire to Bath, improved by Belinus, the fon of that monarch.

Divers public roads were afterwards made by fucceeding Princes, an incontestible proof of which is that called *Ackman-street*, or *Oakmen-street*, leading from Buckinghamfhire through Oxfordfhire to the Foffe, and fo on to Bath.

By Antoninus's *Itinerarium*, it appears that there was a road which led from the *Aquæ folis*, or Waters of Apollo, to *Venta Silurum*, the port of the *Silures*.

Bath residence of a consular army.

Bath was the residence of a consular army for ten years, and upwards; and that, most likely, on account of the springs. Coins, statues, altars, and inscriptions, give evident marks of Roman residence. The Baths were certainly built by the Romans themselves, or by the Britons under Roman influence; so that, in either sense, they may strictly be called Roman: for, till then, the Britons were ignorant of the art of building with stone and mortar.

Baccius (*De Therms*) makes frequent mention of the *Aquas Bathonias in Anglia*. Thus, by consent universal, the existence of Roman Baths has been credited.

Accidentally discovered.

In the year of our Lord 1755, the old Priory, or Abbey-house, was pulled down. In clearing away the foundation, stone coffins, bones of various animals, and other things were found. This moved curiosity to search still deeper. Hot mineral waters gushed forth, and interrupted the work. The old Roman Sewer was at last found;

found; the water was drained off. Foundations of regular buildings were fairly traced.

Assisted by Mr. Wood, Architect, Dr Lucas examined the ruins as they then appeared. In his *Essay on Mineral-waters*, p. 228. Part iii. he gives the following description.—“ Under the foundation of the said Abbey-house, full ten feet deep, appear traces of a bath, whose dimensions are 43 feet by 34. Within, and adjoining to the walls, are the remains of twelve pilasters, each measuring three feet six inches on the front of the plinth, by a projection of two feet three inches. These pillars seem to have supported a roof. This bath stood north and south.

“ To the northward of this room, parted only by a slender wall, with an opening of about ten inches in the middle, adjoined a semi-circular bath, measuring from east to west 14 feet 4 inches, and from the crown of the semi-circle to the partition wall, which divides it from the square bath, 18 feet 10 inches. The roof of this seems to have been sustained by four pilasters, one in each angle, and two at the springing of the circle. This bath seems to have undergone some alteration, the base of the semi-circle is filled up to about the height of five feet, upon which two small pilasters were set on either side from the area, between two separate flights of steps, into the semi-circular part, which seems to be all that was reserved for a bath. In this was placed a stone chair 18 inches high and 16 broad. The two flights of steps were of different dimensions. Those to the west were three feet nine inches broad; those to the east four feet two inches. Each flight consists of

“ steps



“ steps six inches thick, and seem to have been  
 “ worn by use three inches and a half out of the  
 “ square. These flights are divided by a stone  
 “ partition, on a level with the floor. Along  
 “ this division, and along the west side of the  
 “ area, a rude channel, of about three inches  
 “ depth, was cut in the stone. The floor of this  
 “ Bath seems to be on a level with that of the  
 “ square bath.

“ Eastward from the area and stairs of this  
 “ semi-circular bath, stood an elegant room on  
 “ each side, sustained by four pilasters.

*Vapour  
baths.*

“ Separated by a wall stood the *Hypocausta*  
 “ *Laconica*, or *Stoves* to the eastward. These con-  
 “ sisted of two large rooms, each measuring 39  
 “ feet by 22. Each had a double floor, one  
 “ of which lay one foot nine inches lower than  
 “ the area round the square bath. On this  
 “ lower floor stand rows of pillars, composed  
 “ of square bricks, of about an inch and three  
 “ quarters thick, and nine inches square. These  
 “ pillars sustain a second floor composed of tiles  
 “ two feet square, and two inches thick, over  
 “ which are laid two layers of firm cement mor-  
 “ tar, each about two inches thick, which com-  
 “ pose the upper floor.

“ To the northward, separated by a wall of  
 “ three feet eleven inches, stood the other Hy-  
 “ pocautum, with a door of communication.  
 “ The floor of this is about eighteen inches  
 “ higher than the other.

“ These two rooms are set round with square  
 “ brick *tubes* of different lengths, from 16 to  
 “ 20 inches in length, and six and three quarters  
 “ wide. These flues have two lateral openings  
 “ of about two inches square, five inches asun-  
 “ der. These open into the vacuum between  
 “ the two floors, and rise through the walls.

“ The

“ The north wall of the last stove was filled  
“ with tubes of a lesser size, placed horizontally  
“ and perendicularly. The stones and bricks  
“ between the pillars bear evident marks of fire,  
“ while the flues are strongly charged with soot,  
“ which plainly point out their uses.

“ Heat was communicated to these flues by  
“ means of *Præfurnia*. In the middle of the  
“ northern wall of the second stove, the ruins  
“ of one of these furnaces appears. It consists  
“ of strong walls of about 16 feet square, with  
“ an opening in the center of about three feet  
“ wide, which terminates conically in the north  
“ wall of the stove, two feet wide, where part  
“ of the broken arch bears evident marks of fire.  
“ About the mouth of the furnace there were  
“ scattered pieces of burned wood, charcoal,  
“ &c evident proofs of their use.

“ On each side of the furnace, adjoining to  
“ the wall of the northernmost stove, is a semi-  
“ circular chamber, of about ten feet four inches  
“ by nine feet six. Their floors are nearly two  
“ feet six inches lower than that of the next  
“ stove, into which they both open. The pave-  
“ ments are tessellated with variegated rows of  
“ pebbles and red bricks.

“ To the northward of these there appear  
“ ruins of two other square chambers, of more  
“ ordinary work.” Thus far Lucas.

SINCE the time of his publication, the ground  
has been farther cleared away. There now ap-  
pears another semi-circular bath to the south-  
ward, of the same dimensions exactly with the  
first. What he calls the *Great Bath*, with his  
Semi-circular, Hypocausta, Laconica &c forms  
only one wing of a spacious regular building.

From a survey of these our ruins we may with  
some certainty determine the nature of these

*Balnea*

*Balnea  
pensilia.*

*Balnea pensilia*, first invented by Sergius Orata, and afterwards adopted by Asclepiades, according to Pliny, lib. xxi. c. 3. Mercurialis (*De Art. Gymnast. lib. iii. cap. 12.*) ingeniously supposes these *Balnea pensilia* to be swung like modern hammocks, adding pleasure to the power of the waters. Nor does Baccius seem to dissent from this opinion, lib. vii. c. 33. Dr. Glas of Exeter differs with the two last; he supposes them terrass floors, supported by pillars, which allow space for the sublambent fire, *Account of the antient Baths, and their uses in Physic*, p. 11—16. Dr. Swinhow confirms this opinion in his *Dissertatio Inauguralis de Thermarum antiquitate*, &c p. 20. His words are *Quod quidem magis verisimile videtur, et haud leviter ab ipso Plinio confirmari*. The terrass floors supported by brick pillars, and surrounded with flues charged with foot, now convince me of the justness of Glas's and Swinhow's opinion. The Eastern Vapour Baths are now demolishing in order to make way for ruder modern improvements. Whenever the rubbish which covers the eastern wing of the Roman ruins comes to be removed, similar *Balnea pensilia* will doubtless be found.

*Great  
square  
bath.*

From each corner of the westernmost side of Lucas's bath, a base of 68 feet, there issues a wall of stone and mortar. These walls I have traced six or eight feet westward, under that causeway which leads from the church-yard to the Abbey-green. When, as we may suppose, they have run a length proportionable to the width, they compute a bath which may indeed be called *Great*, 96 by 68.

Adjoining to the inside walls of this central bath, there are bases of pilasters, as in Lucas's. Between the wall and the bath, there is a corridor paved with a hard blue stone, eight inches thick.

## BATHS ANTIENT and MODERN.

21

thick. From the westernmost side of Lucas's bath a subterraneous passage has been traced 24 feet, at the end of which was found a leaden cistern, raised about three feet above the pavement, constantly overflowing with hot water. From this a channel is visible in the pavement, in a line of direction eastward, conveying the water to Lucas's bath. In this channel, within four or five feet of the eastern bath, bubbles up a strong spring, which raises the mercury in the Thermometer almost to the same height with the main spring of the King's bath.

If the size of Hercules may be guessed by the print of his foot, if proportion obtained in Roman architecture, we may venture to pronounce that the great spring which now rises in the King's bath, once rose in the western wing of the antiient Roman structure. Assisted by Mr. Palmer, an ingenious builder, I have ventured to exhibit a complete ground plot of the Roman Baths; a discovery of no less curiosity than instruction.

The floor of the eastern bath is paved with a hard blue slate, in the *Somersetshire* idiom called *Pennant flag*. The walls of the baths, as far as the ground is cleared away, are built of small pieces of stone and greyish mortar, or run-lime, at this day almost impenetrable. These walls stand now five or six feet high, plaistered with two or three coats of cement. That next the wall seems to be coarse, intermixed with white and red, hardly separable from the stone. The outermost coat is of a deep brick-dust red, smooth, hard, without a crack; the very mortar described by Vitruvius, which we, with all our improvements, know not how to imitate. This ground plot is exhibited in the plate annexed, as far as the earth is cleared away. The remainder  
is



## BATHS ANTIENT and MODERN.

is supposed, and drawn out in dotted lines. The plate exhibits also an elevation of the section of the wing discovered, with references.

*Ruin of the  
Baths.*

THE time and manner of the ruin of the Roman baths are uncertain. By the perfection of the ground plot now before our eyes, we may rationally pronounce that the Roman baths were destroyed rather by the hand of violence than that of time.

The Romans abandoned their conquests about the year of our Lord 420. Probably they left the baths standing.

In the year 574, the Saxons carried fire and sword to the heads of the fountains; they laid the city of Bath, then *Achmanchester* in ashes, so that if the Baths were spared by the Britons, they were doubtless destroyed by the Saxons.

The Baths lay neglected as a waste place, doomed to receive carrion, ordure, and rubbish of every sort. Their walls were incrustured with a hard white petrification, a proof of the waters being confined by the choaking up of the sewer. What they now are we have already seen.

## C H A P. III.

*Of the Construction of Baths.*

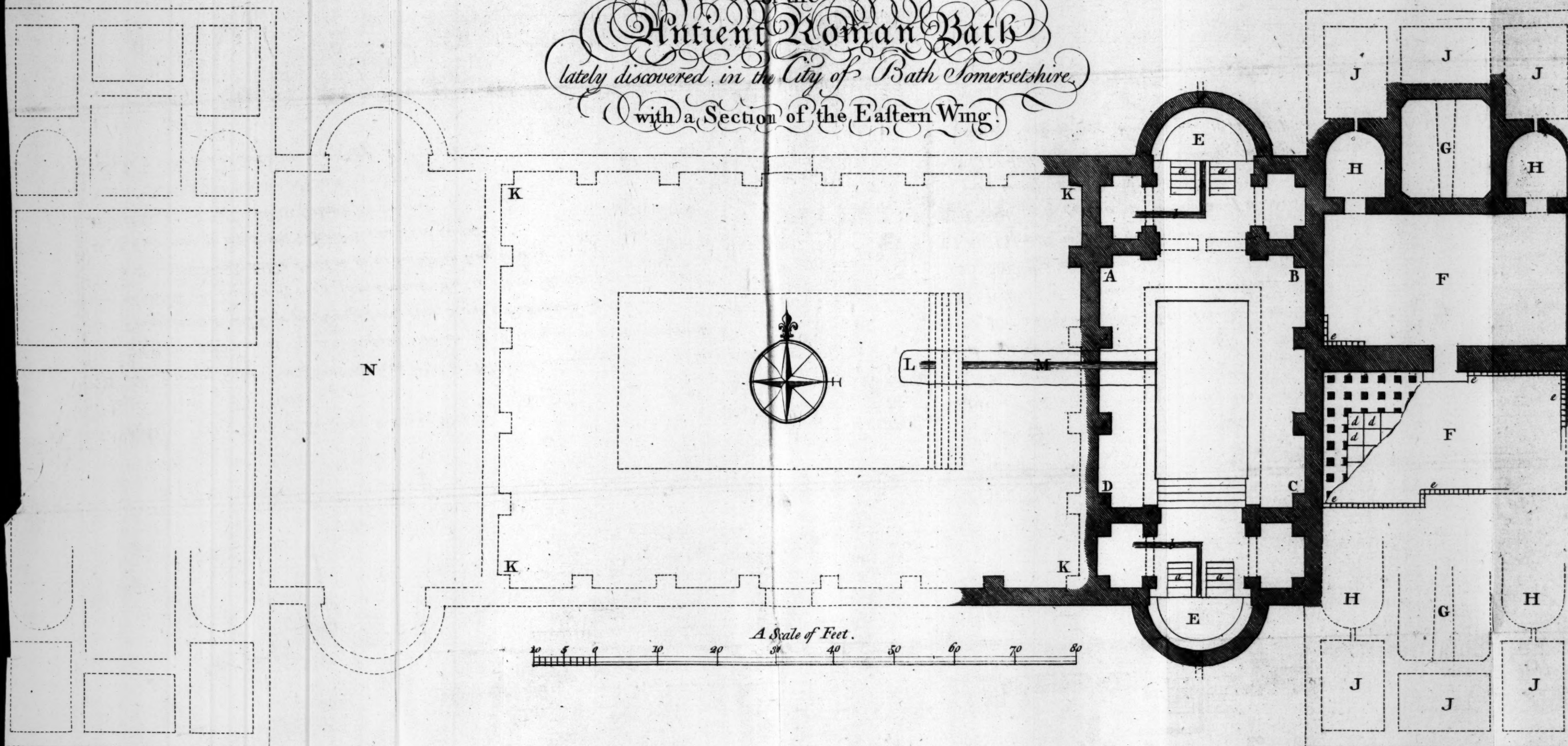
*Their extent.*

THE THERMÆ covered an almost incredible extent of ground, *adeo ut quasdam undecies millies pedum tota area continere constat; auctore Bap. Alberto in libris de Architectura.* The *Dioclesian Thermæ* contained one hundred partitions most nobly and variously finished, besides spacious streets, and appendices belonging to the services of the baths.

The Antonian and Dioclesian baths differed in form and disposition of parts; in both, the area was spacious and square, or rather a square composed



A GROUND PLAN  
of the  
*Ancient Roman Bath*  
*lately discovered in the City of Bath Somersetshire.*  
(with a Section of the Eastern Wing.)



A.B.C.D. a Square Bath 41 Feet long & 34 wide.

E.E. Two Semicircular Baths.

F.F. Two Vapour Baths, whose Floors are supported by Pillars composed of Bricks 14 Inch thick, & 9 Inches square, as at c.c.c, consolidated with strong Mortar, about 14 Inches asunder. These sustain a Floor of strong, hard Tiles, about 2 Feet square, as at d.d.d, on which are Layers of very firm Cement-Mortar. These Rooms were set round with square Brick Tubes from 16 to 20 Inches in length, as at e.e.e.e.e.

G.G. Furnaces by which the Vapour-Baths were heated.

H.H.H.H. Tepid Baths with tessellated Pavements.

J.J.J.J.J. Dressing-Rooms, or Antichambers.

K.K.K.K.K. The Great Bath, 90 Feet long & 68 wide.

L. Part of a Leaden Cistern containing Water nearly of the same Heat with the Kings Bath.

M. A Channel which conveys the Water into the Eastern square Bath.

N. The Western Square Bath with its Appurtenances.

1, 2, 3, 4 &c. Bases of Pilasters which supported Roofs.

a a a a Steps leading down to the Semicircular Baths.

b b b b Channels for conveying Water.

N.B. There are two Drains at the Crowns of the Semicircular Baths at ff which convey the Water to the River.

N.B. The Walls of the Baths now standing are 6 or 7 Feet high, built of Stone & Mortar & are lined with Coats of red Roman Cement now very firm.



composed of three squares. In the first, or external, which inclosed the other two like a rampart, were the *Gymnasia* covered. In the second, or middle, spacious streets extended themselves on all hands, galleries, and plantations, where the company exercised themselves in the open air, *sub divo*. In the third, or central, were the Baths, with their appurtenances, halls, galleries, and portico's, where (according to Vitruvius) the *Athletæ*, or champions performed their exercises under cover in the winter time, and through which they pass immediately into the Baths.

The strong and healthy, after exercise, practised *swimming* only. For this purpose there was a large pond appropriated. Sometimes they passed into the warm baths, and from thence they instantly leaped into the cold. By wonderful art, and, at immense expence, waters warm, hot, and cold were continually received into reservoirs accommodated for all purposes. *Nec mirum, si consideretur publici ædificii magnitudo, in quo communis fuerit ratio maximæ civitatis ad exercitia, ad balnea, ad disciplinas, & ad delicias.* The anterior front of the inner building was divided into two orders of Bagnio's, one on the right of the *Stove*, or *Hypocaustum*, the other on the left. Each order was divided into four chambers conforming on both sides, and so built, that there was a passage from each into the other.

In the middle was the *Hypocaustum*, or furnace, common to the *Caldaria* on both sides, *one appropriated for the men, the other for the women.* From this branched out *fues* through the walls of the baths, as Statius elegantly expresses it,

## BATHS ANTIENT and MODERN.

----- *Ubi languidus ignis inerrat  
Ædibus, & tenuem volvunt hypocausta vaporem.*

Over this furnace there were placed three Boilers, or caldrons, named *Caldarium*, *Tepidarium*, and *Frigidarium*, by the Latins, and *Μυσαγία* by the Greeks, from their immense capacity. These were placed so that as fast as the *Tepidarium* emptied itself into the *Caldarium*, so fast should the *Frigidarium* empty itself into the *Tepidarium*.

*Camerae.*

The *Camerae*, or chambers were four, *Laconicum*, *Calidarium*, *Frigidarium*, and *Tepidarium*. Sometimes they were but three. *Sub veste primum paululum in Tepidario sudare solitos, tum transire ad Calidarium, ubi sudabatur largius, deinde in frigidam*, says *Celsus lib. i. cap. 4.* *Primum enim ingredientes in aere versantur calido; hinc, in aquam calidam descendunt. Ab hac in frigidam, & tandem in quarta sudorem detergebant, quod erat Tepidarium*, says *Galen, lib. x. Method.* The term *Laconicum* was taken from the *Lacones*, who were the authors of this species of bathing, as we learn from *Plutarch*, in his *Life of Alcibiades*. The Greeks sometimes gave it the name of *Πυρρῶπιον*, or *ὑποκαυστον*, from its fiery dry vapor. The Latins gave it the name of *Calidarium* quasi *Cella calida*. *Seneca* calls it *Sudatorium*. The intention of this bath was, that the patient might sweat profusely here, and then, anointed, go into the cold bath. *Martial*, speaking of the Etrurian baths, says,

*Ritus si tibi placeant Laconum  
Contentus potes arido vapore  
Cruda Virgine, Martiaque mergi.*

*Vapor-  
Baths.*

*Celsus* calls this manner of bathing *Assænationes*. In another place he orders the bodies



to be dried, *exsiccati corpora*. Oribasius calls the air of the *Laconicum* hot and moist, which seems rational; for the floors of these Vapor-baths were composed of *terrasse*, supported by bricks of about 20 inches diameter. These bricks were supported by rows of short pillars of bricks of about eight inches square. Between the interstices of those pillars gleams of flame issued from the common stove. Water was also admitted from adjoining baths. Proofs of both which any body may now see in the ruins of our Roman baths, some of which I have saved. *Partim aqueis per suos tubos, ac spiracula, vapores mixti ad hæmisphærium Laconici petentes, sub curvatura magni clypei, in tenuissimas convertantur aspergines, quæ imbrium modo, supra capita eorum qui morabantur in Laconico depluebant.* Galen (Method. x.) says, *Potest autem hæc prima pars suo tenui calore, reſeratis undique meatibus, liquatisque per totum superfluis, sudores, utilesque madores elicere, inæqualia æquare, cutim laxare, & multa hæc sub detenta evacuare.*

From the *Laconicum*, or Vapor-bath, the bather went into the *Calidarium*, which properly was called Λουτρον, i. e. *Lavacrum*, or Warm-water-bath. This bath was larger than any of the rest, the patient tarried longer in it, and used it oftener, especially the weak. In private baths, it was tempered to any degree of heat.

From the *Calidarium* the bather went directly into the *Frigidarium*.

From the *Frigidarium*, there was a passage back *Frigidarium* into the *Tepidarium*, Vapor-bath, or *Apodyterium*, or *Dressing-room*; here began and ended the Bath.

Till the days of Asclepiades, the Romans probably heated their water in a boiler, and then poured it into a tub. These warriors cured themselves by sweating in the same rude man-

## BATHS ANTIENT and MODERN.

ner as the Indians do at this day. *Asclepiadem adjuvare multa, quorum cura nimis anxia & rudis, ut obruendi ægros veste, sudoresque omni-modo ciendi, nunc corpora ad ignes torrendi; imo vero toti Italie imperatrici tum primum pensilium balneareum usu, ad infinitum blandiente*, says Pliny *Hist. lib. xxvi. cap. 3.* *Quædam nostra demum memoria prodiisse scimus---ut suspensuras Balnearum, & impressos parietibus tubos, per quos circumfunderetur calor, qui ima semel & summa foveret æqualiter*, says Seneca. The *suspensuræ balnearum* and the *flues* in the walls which Seneca expressly mentions were undoubtedly contrived to heat the stoves under and over. Vitruvius orders the hearth or furnace to rise gradually from the *Præfurnium*, *quo facilius flamma pervagaretur sub suspensura.*

*Antient  
manner of  
bathing.*

In the three, the manner of bathing was the same. The bather sat down on a joint-stool called *Solium*, the legs and thighs immersed only in water.

The water was taken up and poured on his head, and particular parts, from pitchers and urns, from greater or lesser heights. In some cases, the bathers came out of the hot water, were anointed, and returned. In others, they did not go into the water, but sat down by the side of the bath, and had the water poured on them.

After bathing in the cooler water, they were rubbed commonly, and detained in a temperate air till the sweat ceased. Then they were wiped dry, anointed, dressed, and dismissed. In disorders of the head, Celsus mentions the manner of using the different baths, *lib. i. c. 4.* “*Sub veste primum paululum in Tepidario insudare, ibi ungi, tum transire in Caldarium; ubi sudarit, in solium non descendere, sed multa aqua calida per caput se totum perfundere, tum tepida*

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“ tepida uti, deinde frigida, diutiusque ea ca-  
 “ put quam cæteras partes perfundere ; deinde  
 “ id aliquandiu perfricare, novissime detergere,  
 “ & ungere.”

Modern practice immerses the body in warm *Modern*  
 water, *mento tenuis*, up to the chin. The head, *practice.*  
 mean-while, is exposed to the external air. As the  
 pressure of water is 885 times more than that of  
 the atmosphere, and as the juices are greatly ra-  
 rified by heat, need we be surprized if the blood  
 forcibly driven up should occasion head-aches,  
 vertigos, apoplexies, &c. ?

The water contained in the *Frigidarium* was  
 cold, in private baths designed for the healthy,  
 as Pliny the younger observes in his *Ep. vi.*  
*lib. v.*

The *Frigidaria* used for invalids were not quite  
 cold; for, the kiln or oven was open under the  
 Frigidarium, as well as the Tepidarium and Cal-  
 darium. This appears from the direction for  
 building baths given by Vitruvius, *lib. v. cap. 10.*  
*Supra hypocaustum tria abena sunt componenda, Cal-*  
*darium, Tepidarium, & Frigidarium, ita collocata*  
*uti ex Tepidario, in Caldarium quantum aquæ callidæ*  
*exisset, influeret de Frigidario, in Tepidarium eadem*  
*ratione.* These bathing vessels ranged one after  
 another in the same direction so that the water  
 fell from the one into the other. The hearth  
 was lowest at the *præfurnium* or kiln's mouth,  
 and gradually ascended as it went back under the  
 Caldarium, Tepidarium, and Frigidarium. From  
 this situation of the Frigidarium, and from the  
 continuance of the sweat which was expected after  
 bathing in the cooler water (as Galen relates,  
*Method. Med. lib. x. cap. 10.*) we may conclude  
 that the chill of the water in the Frigidarium  
 was taken off.

## BATHS ANTIENT and MODERN.

The Arabian Physicians (as we learn from Avicenna, lib. i. Canon. Fen. 3. Doct. 2. cap. 6.) ordered the water of the cold bath to be softened when it was used after the hot. *Oportet ne aqua multum sit frigida, imo ut sit temperata.*

*Cella Ole-  
aria.*

THE *Cella Olearia* was to be seen (says Baccius, p. 384.) in Dioclesian's baths, before the *Tepidarium*. There the oils, ointments, and perfumes were kept. The practice of anointing was common. Ointments were sometimes the common gift of the Emperors, whose luxury was incredible, especially at the dedication of baths. Lampridius tells us that Heliogabalus never bathed till the waters were perfumed with precious ointments. Pliny informs us that Nero not only perfumed the baths with hot ointments, but he washed also with cold ointments. The names of these precious ointments are preserved in antient story, the *Oenanthium*, *Erothinum*, *Rhodium*, *Cyprinum*, *Nardinum*, *Spicatum*, *Jasminum*. This luxury descended at last even to *Whores*, as Juvenal observes,

*Luxury.*

*Mæchis foliata parantur.*

## CHAP. IV.

*Of the Thermulæ or Stuphæ.*

*Stuphæ.*

“**U**TIMUR quidem in Italia, & frequentius in Germania, duplici Stupharum genere, arctissimæ concamerationes pro servando calore,” says Baccius, p. 393. Some of these were private, of hot air, which the Germans make particular use of in winter. The same which the Dutch women use at this day. Others there are public, or rather mercenary, where people bathe, sweat, and cup, *ubi lavantur, sudant,*



*sudant, & cornua quædam scabiosis applicantur, ad  
trahendum e suprema cute sanguinem.*

As in private baths, so in the *Stuphæ*, there *Apodyte-*  
were three distinct parts, *Apodyterium*, *Laconicum*, *rium*.  
and *Calidarium*. As the temperature of these  
was to be different, the furnace was so placed  
below, that it served the common purpose of  
warming the water, as well as diffusing the va-  
por to different parts. In the *Vestibulum*, or  
Dressing-Room, there was a porch, in which  
people walked till they could be admitted.  
First, they went into this *Apodyterium*, or  
*Tepidarium*, of a temperate heat, where they  
undressed. Compared with the other cham-  
bers, this was double, chearful, and adorned  
with pleasant pictures. In a part of this was  
the *Tonstrina*, with its *Æleothesia*, or *Ambry*,  
stored with perfumes, oils, and ointments.  
From this there were two doors, one into  
the *Laconicum*, for the purpose of sweating,  
the other into the *Calidarium*, for bathing, with-  
out sweating. The *Laconicum* was round con-*Laconi-*  
camerated, filled with hot vapor, from the sub-*cum*.  
jacent furnace, as well as the steam of hot wa-  
ter. Here persons sweated profusely. Here  
little horns were applied for the purpose of *Cupping*. *Cupping*.  
Galen mentions these *Corniculi*; so does Corn.  
Celsus, who says there were two sorts, one of  
horn with a little hole filled with wax; the other  
of brass, applied with hot ointment.

From the *Laconicum*, they passed into the *Calida-*  
*rium*.  
*Calidarium*, in which the temperature of the  
air was equal to that of the *Apodyterium*,  
where they washed, and thence sprung forth-  
with into cold water, or luke-warm. Those  
who, from sweating, and the use of the *Laconi-*  
*cum*, do not (says Galen) immediately go into  
cold water, feel their whole body chilled; nor

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are they out of danger, by exposing their open pores to the external air. Which danger is prevented by the perfusion of cold water, by which the skin is condensed, and the parts before heated are here safely cooled. *Eodem Galeno teste, Laconicum & cætera calidaria præparatoria sint ad frigidam.* Those who want not to sweat, may pass directly from the Dressing-room into the warm water or Calidarium. Those who wish to reap every benefit of bathing, and cure infirmities, *intrent balneum, cubent, taceant, laventur, & in Apodyterium redeant, ubi commode exsiccentur, vestirique incipiant, ac ita in pristinum naturæ habitum belle restituti, abeantque.* Atque hic esse debet Stupharum ritus, says Baccius, p. 394, 395.

The Roman *Stuphæ*, were none other than the Greek *Hypocausta*, *stipatum conclave, accensis, a tergo vel sub camino ignibus concalescens*, Ἀποθινκας Θερμας, *Cellas Calidarias in quibus sedentes calefierent.*

*Vapora-  
riæ fene-  
stræ.*

From this *Hypocaustum*, *Stupha*, or *Camera* which contained hot air, there were *Vaporariæ fenestræ*, or *Tubes*, which conveyed hot air under the floors, over the ceilings, and through the walls. The principal hot room and the tubes were indiscriminately called *Hypocausta*, or *Stoves*.

*Uti.*

Pliny explains the manner in his letter to Gallus. *Applicatum est cubiculo Hypocaustum perrexiguum, quod, angusta fenestra, suppositum calorem (ut ratio exigit) aut affundit, aut retinet.* Seneca, writing to Lucullus, mentions this contrivance as one of the *deliciæ* of the age. *Impressos parietibus tubos a Præfurnio, per quos circumfusus calor, ima semel & summa calfaceret æqualiter.* Paulus, a Lawyer, defines them *Tubulos per quos paries calore torretar.* The same Pliny, in another letter to Gallus, calls them *Zetæ*, and *Zeteculæ*, *propria calorum conclavia, ubi lectuli essent ad delicias & amores.* Heliogabalus ordered these *Zetæ*, or

Bagnio's

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Bagnio's to be vapored with the costly perfumes of India. That there were vestiges of such tubes then to be seen in the sacrum of the churches *Saint Helena*, and that of the *Holy Cross* in Jerusalem, *qui sub opere tectorio quadrata forma, quatuor digitorum lata, ac triplici conjuncta ordine, ab imo (ut mihi videtur) hypocausto calores in supernas adium partes deferre debent*, says Baccius, p. 396. The very same are now to be seen in the Roman Ruins at *Bath*.

THE Greeks, and their imitators the first Romans, bestowed not a little labour and expense in airing their houses. Abroad they spent the whole day in liberal exercises; content with a spare breakfast, about sun-set they had their public baths. Respecting the difference of seasons, they diffused heat over all the house, *in cameras, in triclinia, in aulas, in zetas, in musæa*. Thus they preserved their houses, pictures, books, cloaths, and costly furniture.

In the days of primitive virtue, the structure of houses was simple, the windows were but small; there were then no *Portici pensiles* for show. The Romans (like our *Highlanders*) adapted their dress to necessity. Cloathed in simple loose *Tunic's*, they dared the dangers of warfare and exercise. Their brawny limbs were *non indecoro pulvere sordidi*. Speaking of the Italians his countrymen, Baccius says, "From rude northern custom, sinking under the pressure of cloaths, and swaddled in bandages, we lounge away whole days over coal fires. By idleness and pressure, we grow inactive. By smoak we injure our eyes. Our bodies and our senses forget their offices. Antient Rome cloathed her sons *soluta sago, aut simplici tunica*. Modern Rome cloathes her sons in streight garments. Dressed like slaves, " their

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"their skirts dangle down to their heels." In their antient natural dress, the *Highlanders* forded rivers, and skipped over mountains. Oppressed with sleep, they wrapped themselves up in their *latæ togæ*, or *plaids*, laid themselves down on the heath, and defied nocturnal damps. Blind policy (in its fright) saw treason even in dress. In German plains, *Highlanders* are gratified with their antient habit, while those who seek their bread amidst fastnesses and woods, mourn the severity of being *legally* pinioned with breeches, and doomed to dangle unnatural skirts.

In antient opulent houses, from one common stove divers uses were obtained. In the lower *Præfurnium*, where the servants lived, was the domestic kitchen. Above, and on all sides of the *Hypocaustum*, where the *Vasa Balnearia* were fixed, were distributed the Baths. Thro' tubes and under the floors, and within the walls, fire vapor exhaled through every part of the building. *Quod artificium* (says Baccius) *animadverti olim ex ruinis in Tusculo Luculli, ubi, in fronte situm erat Hypocaustum, rotunda forma, centum pedum ambitu, distinctum æquis spatiis per foculos arcuatos, ex quibus tubi occulti & ficti deducebant colorem per tria stadia, sub solo, sub viridariis, ad capita villa, ubi ædes omnes, & cubicula communem susciperent colorem apertis vel stipatis fenestris, quantum vellent.*

The antient Germans used to build a concentered furnace behind the *Stuphæ*; from this, heat was carried through tubes. Vapors commonly transpired through little openings in the pavement, or sometimes there were placed ornaments, figures, or statues, which poured forth hot air, insensibly, through their nostrils, ears, eyes, spears, &c.



## BATHS ANTIENT and MODERN.

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On the subject of Bathing, Baccius exceeds all who went before him. To this study he seems to have applied himself with a spirit truly philosophic. His book *De Thermis* is a treasure in which every antient gem may be viewed. He has not only restored the art of Bathing, but he has fully proved that Bathing, properly applied, exceeds the power of every other medicine.

He describes the form of the natural Baths of *Baccius's* his day.----“ Our Baths used to be convenient *account.*  
 “ enough; for, besides the common tanks  
 “ which receive the common influx of different  
 “ veins, there are particular Baths on all sides,  
 “ divided by single walls, some for men, others  
 “ for women, some for those who labour under  
 “ infectious disorders; some more, some less  
 “ temperate. These are all covered and paved. *Et*  
 “ *teſto operta, & contabulata.* It may not be amiſs  
 “ to obſerve that the inner cloſet, or *conclave*,  
 “ is contrived ſo as not to be quite cloſe. In it  
 “ there are placed windows, *fenestræ volubiles*,  
 “ by which thoſe vapors which putrify in cloſe  
 “ places, and contaminate the viſcera, may  
 “ tranſpire. Better it were to place pipes of  
 “ hot and cold water near, that the heat of the  
 “ water might be duly tempered.” *Satius erit*  
*canaliculos calidarum & frigidarum juxta collocasse,*  
*ut quotiescunque expedierit, aquarum variæ poſſint*  
*ſieri temperaturæ.*

“ Let the bather likewise, before his going  
 “ in, get rid of all other excrements; let him  
 “ bathe on an empty stomach, early in the  
 “ morning, and an hour before supper; for,  
 “ at thoſe times concoction is completed. Let  
 “ him put on drawers, or trowſers, *ſubligaculis*,  
 “ and a thick ruſſet cap, *birreto*, leſt his head  
 “ ſhould be filled with vapors; let him gradu-  
 “ ally immerge his naked body up to the ſhoul-  
 “ ders,

## BATHS ANTIENT and MODERN.

" ders, *sensum descendat, non semel, ut in frigidis.*  
 " Let the temperament of the water be such as  
 " the affection requires, and as the patient  
 " thinks grateful; *acribus vero, & quæ carent*  
 " *alterius aquæ temperamento, reserare & claudere*  
 " *venarum emissaria tantisper est opus.* Let the  
 " bather sit still; if the heat is like to overcome  
 " him, he may put his hands or feet above wa-  
 " ter, *taceat, & nihil agat, sed, per ministros ter-*  
 " *geatur, ne commoto corpore muscoli extendantur.*  
 " Let him stay longer than in the artificial Bath  
 " an hour, or more, *& in summa pro tolerantia,*  
 " *quam potissime, in omni Thermarum usu, regulam*  
 " *præscriptimus.* Or, according to some, till the  
 " fingers and toes begin to purple, *donec digito-*  
 " *rum extremitates rugas contrahere ceperint.* Or,  
 " better, till the sweat begins to bedew the  
 " brow, *qui jam deductas esse ad cutim superfluita-*  
 " *tes erit indicium, ac festinare eas ad exitum per*  
 " *sudorem.* Then let him come out, be rubbed  
 " dry, go to his chamber, and lay down without  
 " sleeping. There let him sweat, and be dried  
 " with towels, till he returns to his former state.  
 " Then let him rise, and eat moderately. If,  
 " by over hot bathing, the skin feels dry, and as  
 " it were inflamed, *quasi incensa,* I would advise  
 " the body to be sprinkled with common cold  
 " water, according to Pliny, *laudo quam Plinius*  
 " *ponit antiquorum consuetudinem, ut frigida dulci*  
 " *saltem conspergatur.*"

In this case he only advises cold asperision to  
 those who have been used to it. He perempto-  
 rily forbids it after bathing in hot natural Baths,  
 because the advantages procured by cold water  
 may be as well obtained by the mineral princi-  
 ples of the natural bath; these close the pores,  
 condensate the skin, and defend the body from  
 external injuries. *Cæterum id longe a ratione alie-*  
num

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 " voca

num in Balneis naturalibus, quia sic per frigidam cohibita perspiratione (sudoribus jam per balneum excitatis) ad intima viderim lethales inflammationes in viscera. Quo nomine satius existimo, ut durante balneo ab omni frigida conspersione abstineant. Nam si quas utilitates præstaret frigida, cutim densando, poros claudendo, easdem simul operantur Balnea naturalia, quæ actuali caliditate, & terrea minerarum sic citate valenter constipare cutim possunt. He allows patients to be anointed according to the common custom in artificial Baths. Sin autem communem in hoc approbamus usum de Unctionibus ad Balnea naturalia, &c. page 73, 74, 96.

## C H A P. V.

*Of Asperion, or Pumping.*

“ FROM Bathing Baccius proceeds (p. 74.) *Pumping.*  
 “ to Asperion. Among the antients, As-  
 “ perion was common in their luxurious artifi-  
 “ cial baths. The custom was to descend from  
 “ the Caldarium into the Frigidarium, as we have  
 “ already explained, or to receive the water  
 “ sprinkled on the body from a height. By rea-  
 “ son of the scantiness of the Bath, or, for some  
 “ particular reason, total immersion was often  
 “ forbidden, the water was received on some  
 “ particular member. Porro nobis usurpanda ve-  
 “ nit aspersio, interdum ob balnei penuriam, interdum  
 “ data opera, ubi, ob aliquam causam prohibemur a  
 “ balneo, quod per speciales quosdam casus breviter  
 “ percurremus. Asperion was used for head-  
 “ aches, in ardent fevers, faintings, haimorages, de-  
 “ liriums, phrensies, ulcers, &c. The use of As-  
 “ perion in natural baths was rare among the  
 “ antients. Aspersionum vero usus, ad balnea na-  
 “ turalia, rarior videtur fuisse antiquis. Its proper  
 “ vocabule is neither to be found among the  
 “ Greeks,

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Greeks, nor among the Latins. The common term is *impluvium*, *impluere*, *infundere*, *conspere*. Pliny, of all men the most observant of antient rites, makes no mention of it. Horace writing from *Baie*, seems to take notice of the custom.

*Qui caput & stomachum supponere fontibus  
audent*

*Clusinis; Gabiosque petant, & frigida rura.*

To express this operation, Baccius usurps a more modern vulgar term *Duccia*. This word *Duccia* is sometimes applied to *Stillicidium*, sometimes to *Aspersio*, and is no more nor less than what we now use every day, and improperly name *Dry-pumping*.

There are one, two, or more pipes stopped by a voluble *cock*, *spiggot*, or *Epistomion*, which pour forth the water from the common fountain. From this the water falls at the distance of a hand-breadth, or cubit. The method is two-fold. He who wants the aspersio only, sits on a seat, or reclines, in such a posture, that the water may bedew any particular part. The other is so contrived, that immersing the body in the bath, the patient may receive the water from the cock, in form of a *stillicidium*, *qui modus in robustiore corpore, ac veteri affectu utilior est, attrahente simul infra a balneo, ac aqua ipsa Ducciae ex ictu vehementer discutiente*. This answers the purposes of *beating*, *drying*, *resolving*, *softening*, and *strengthening*. If there are particular affections in the upper part of the body, Galen commends this perfusion as a powerful *penetrant* and *discutient*. Hot sulphureous waters thus act powerfully as discutients. Aluminous, ferrugineous, and sulphureous



" phureous waters act powerfully as discutients,  
 " and strengthners. Galen (*De san. tuenda*) ob-  
 " serves that natural hot baths are hurtful, *capi-*  
 " *tibus natura calidis, frigido aliqui existente affec-*  
 " *tu. Affectibus, naturis, & membris frigidis,*  
 " *Duccia est optimum remedium. Affectibus hepatis,*  
 " *lienis, & ventriculi, quæ minus sunt frigida,*  
 " *Duccia non concedenda, nisi in desperatis.* In in-  
 " veterate head-aches, the hair is to be razed  
 " for the breadth of four fingers, and the length  
 " of two, from the coronal to the sagittal suture.  
 " The head is to be bound with a coronal cap,  
 " and the patient is to sit on a stool. The first  
 " day he is to use the tepid stillicidium, increas-  
 " ing the heat by degrees.----Those who are af-  
 " fected with a cold moist catarrh, or deafness,  
 " are to receive the Duccia on the *Bregma*, be-  
 " ing the thinnest part.----For relaxations, re-  
 " solutions, detensions, spasms, contractions, or  
 " infirmities of the nerves, the impluvium is to  
 " be received on the occiput, nape of the neck,  
 " shoulders, and down the whole spine. If the  
 " defluxion has ceased, the parts affected are to  
 " be bedewed, and that for a long time.----In  
 " inveterate hæmicrania's the part is to be  
 " pumped, morning and evening, on an empty  
 " stomach. He recommends pumping in ca-  
 " carrhs, loss of memory, epilepsy, deafness,  
 " &c.

" He orders the patient to continue this re-  
 " gimen for twenty days, one hour, or more, as  
 " he can bear it, every day. The head is be  
 " rubbed, dried, and then covered. Sleep is  
 " to be avoided thro' the day. He is to live  
 " on a regular diet for forty days, he is not  
 " to wash his head, nor remove the crust left  
 " by the water. *Solem vitet, ventum, atque vena-*  
 " *rem.*"

This

*Modus operandi.*

This operation does not hurt by its heat, cold, or pressure; but in regard to the nature of the fluids contained. Those who have their humors set afloat from the lightest cause, viz. from anger, exercise, drinking, heat of the sun, sleeping in the day, or crapula, may be easily injured by bathing, or pumping.

*Effects.*

By its weight, pressure, heat, and coldness, water has produced wonderful effects. Heat rarifies the juices, the diameters of the vessels are enlarged, the obstructing matter is reabsorbed, broken down, and excreted by the secretory organs. Cold rouses the spirits, invigorates the heart, and forces the blood from the center to the circumference. Thus are obstructions removed, thus are parts oedematous, phlegmatic, and relaxed, invigorated. Great Cures have been performed by *Pumping*, hot and cold. Water falling from a height, or forced through a tube of a large diameter, has subdued inveterate ailments. Obstinate pains have been relieved by heat, and completely cured by cold. Hot and cold pumping have rationally succeeded each other. In local inflammations, warmth relaxes the fibres, opens the pores, and gives morbid particles room to escape. By the unseasonable use of cold applications, gangrenes have been brought on, which might have been prevented by warm. Hence it is, that (in northern countries) observation and experience directs the inhabitants to rub their benumbed frost-bitten limbs with snow, before they suffer them to approach the fire. *Perfundere caput calida ante Balnearium vaporationem, & postea frigida saluberrimum*, says Pliny, Nat. Hist. lib. xxviii. cap. 4. ---Coelius Aurelianus and Alexander Trallianus joined hot and cold Bathing. Of this practice Fabricius Hildanus gives us many happy instances.

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instances. *Similia similibus curantur; Contraria etiam contrariis.* Maniacal symptoms have been exasperated by heat, and cured by cold. Paralytic symptoms have sometimes been increased by warm wet baths, and cured by the fall of *Cataracts*, or *Mill-spouts*.

Dr. Pierce (in his *Bath-Memoirs*, p. 238) says, This they usually do in *Sciatica's*, *Palsies*, *Cold withered Limbs*, *Stupors*, *Dulness of the head*, *Deafness*, &c. His Memoirs contain many instances of the joint effects of *Pumping* and *Batbing*.

1. "Lady Stafford (for a most inveterate *Cases of head-ach*) sat under the *Dry-pump* three or four *Pumping* times a week, and thus was greatly advantaged."

2. "Lady Roberts came hither for the same complaint. She drank the water every morning, and pumped her head at night, from which she had great alleviation."

3. "Mrs. Bowler, among many other complaints, had a violent pain in her head, in so much that the least noise seemed as if it rent it to pieces. She needed drinking, bathing, and pumping, but had not strength to comport with either. By gentle degrees she was put upon all, but stuck mainly to the latter, pumping first on her head in the Bath, afterwards at the *Dry-pump*. She not only bore it well, but received so much benefit, that she came again a second, and a third time, and was at length recovered to a great degree of ease, and health."

4. "William Warner, Esquire, came hither for *deafness*. He stuck to the Pump, in and out of the Bath, by which he manifestly recovered."

5. "Mrs. Hughs was so *deaf*, that her friends conversed with her by signs. She used the

F

" Pump

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" Pump a great while before she found any  
 " benefit; but, at length (using inward means  
 " withal) she got a competent hearing, but then  
 " thought herself well too soon, and returned  
 " with half her errand."

Dr. Baynard (in his Appendix, p. 435) speaks  
 thus. " To begin with *Cures* done by the force  
 " of heat from the *Pump*, where the hottest  
 " Baths will not reach the distemper, that it lies  
 " deep among the muscles, or is cold and chro-  
 " nic, I have often seen the effects of *Pumping*  
 " to a miracle."

6. " A man of quality, who had for some  
 " years an aching and gnawing pain in his arm,  
 " a little above the muscle *Biceps*, who had tried  
 " ointments, plaisters, fomentations, blisters, purges,  
 " bleeding, and all the train of *Do-littles* to no  
 " purpose, at last he came to *Bath*, and began  
 " with 200 pumps, and increased every day a  
 " hundred, till he came to 1500, or near 2000.  
 " When he found the pain abate, he abated  
 " the strokes gradually. He recovered."

7. " By *Pumping* (under good management)  
 " I have seen very great *Cures* performed (con-  
 " tinues the Doctor) as namely in the *Sciatica*,  
 " or *Hip-ach*. One memorable Case was that  
 " of a Gentleman of *Ireland*, who lived in most  
 " intolerable pain; and he yielding to that side  
 " in walking, it had drawn him crooked. He  
 " pumped at least from 500, to 2 or 3000 strokes,  
 " by which he had some ease. I advised him to  
 " try *Cupping*, which he said he had formerly  
 " used to no purpose. I advised him to try it  
 " again after warming the part at the *Pump*. By  
 " two or three trials, he was perfectly cured  
 " and I think two of these cuppings were with-  
 " out scarification."

8. " An



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8. "An Alderman of Bath complained of great pain in his back, which seemed to lie deep, so pungent that he could neither sleep nor eat, he went as if he was crooked. He had every sort of advice, for he was an Apothecary. Of his own head, *proprio impulsu*, he tried the Pump. From 500 he proceeded to 2000, and so on to 3000, with a *continuan-do*. To Pumping, and nothing but pumping, he owed his cure. And doubtless, in many chronical old aches and bruises, men might receive much more benefit than they do, would they have patience, and perseverance; but such is people's haste, that if they have not a perfect cure in a week, two, or three, they neglect, grow weary, and totally abandon farther trials."

9. "William Day, Shipwright, received a fall which lamed him for a year. After a fortnight's bathing and pumping he hung up his crutches."

10. "Sir Humphrey Loyd (by a fall from his horse at *Milan*) was troubled with the Sciatica twelve months. In six times bathing and pumping, he recovered."

11. "Sir Richard Crump, much grieved with old aches occasioned by a fall from his horse, by which the head, shoulder, and arm of the left side were sore bruised, after the use of many remedies to no purpose, came to Bath in 1676, where using the Bath three weeks, with pumping, he found little benefit. Two days after his return to Bristol, his pains abated, after three weeks they vanished. He testified the cure under his hand."

12. "Daniel Elwell, of *Sedgley*, was dislocated in the back-bone, and lay three years bed-ridden. By bathing, the reduction was faci-

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"litated, and he was cured. Witness his own hand, 25 September, 1695."

13. "Captain Riggs, coming down from the bench where he sat as Justice of the Peace, the steps slipped away, by which he fell down on his back among the crowd, by whom he was trampled all over his body. The bone of his left arm was broken, the muscles were very much bruised. The fracture was set well enough, but there remained great weakness and pain.

"Some months after he had his arm pumped, which gave him severe pain at first, less and less by degrees. For the first six or seven week he felt little amendment. He is now perfectly recovered."

## C H A P. VI.

*Of Sudatories and Vaporaries.*

*Stoves.*

**W**E have already explained the use of the *Stuphæ*. Sudatories are the same in natural Baths, with this exception, that the *Stuphæ* heated by the vapor of artificial water, wet more, and are therefore useful to the healthy, and the weak. Natural Sudatories, (by their igneous power) dry, heat, penetrate, discuss, and provoke sweat. Natural sweats are therefore proper in Dropsies, humoral, or windy distentions. In such (says Celsus) sweat is to be provoked, *non modo exercitatione, Laconico, & Clybano, sed arena calida, & fitco vapore, quales maxime utiles suo tempore prodidit super Baias in Myrthetis, quæ ad hanc ætatem manent.*

"These likewise cure œdematous swellings of the abdomen, feet, testicles, &c.; for, *ex ipso didicimus, bernias quacunque causa generatas, at in principiis potissimum, hisce sudatoriis percurari,*"

"says

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“ says Baccius, p. 77. He proceeds. *Faciunt etiam ad induratos juncturarum ac nervorum affectus, ad Ischiadem, Podagram, ad distensiones quasunque, præsertim ex resolutione, interdum etiam ex vulnere.*

“ There are some who receive the vapors of *Manner of*  
 “ hot mineral waters, by sitting in a little cabbin *using.*  
 “ built overthem. This method seems hardly  
 “ powerful enough, as the watery particles are  
 “ raised together with the mineral. In others,  
 “ there are natural cavities (as in those of *Puteoli*) where, by the vehemence of igneous  
 “ heat joined to art, the bathers fall into profuse  
 “ sweats, as in Stoves. This kind of Vapor-  
 “ bath raises sharper sweats than the Laconicum.  
 “ In vapor-baths there ought to be air-holes,  
 “ *spiracula*, by which the patients and their  
 “ guides may be refreshed, and through which  
 “ part of the vapory steams may occasionally be  
 “ vented. There are others constructed with  
 “ holes fitted for receiving the particular mem-  
 “ bers intended to be sweated, so contrived that  
 “ the patient may lay at his ease, keeping the  
 “ members over the steam for days and nights,  
 “ and in which stiff joints may be conveniently  
 “ anointed. He concludes his precepts on *Vapor-baths* with two wholesome cautions. 1.  
 “ In sudatories of the most wholesome waters,  
 “ there are crevices through which unwholesome  
 “ blasts sometimes perspire. The place ought  
 “ therefore first to be narrowly examined. 2.  
 “ In general, natural sweatings offend all hot  
 “ dry temperaments, those who have been long  
 “ ill, and those who fall into syncopes through  
 “ heat.”

Hot air not only warms, but it dries, dissolves, *Virtues.*  
 and digests. It is useful in diseases of children,  
 women, old men, the weak, relaxed, fat, cold,  
 moist.

## BATHS ANTIENT and MODERN.

*Dangers.*

moist, especially if it is, at the same time, medicated with the vapors of salutary woods, resins, gums, &c.—The slender, choleric; and pulmonic ought to be well advised. In many cases it stops alvine and urinary discharges, and stupifies. From imprudent and sudden changes of air, apoplexies, and other disorders have followed. Fresh air is to be admitted by degrees.

Sweats were procured by the antients in their Vapor-baths. When the intention is to make a sudden derivation from the center to the surface, to warm, dry, open and attenuate by the cuticular and pulmonary pores, this method is useful.

*Cautions.*

When this operation is to be set about, there must be no sign of a plethora, no excrement of any sort lurking in the intestinal, or urinary passages, digestion must be thoroughly completed. Thy hypocaustum must be close, well-warmed, the furnace must burn with a clear flame. In one corner of the room there ought to be a little cabin surrounded with blankets, into which the patient is to enter naked. Sitting in a chair under which there is placed a stove filled with live coals besprinkled with proper powders, the patient is to sit as long as he can bear it, opening the curtain now and then for the admission of fresh air.

*Moist Sudatories.*

There are also moist sudatories, after this manner. Herbs, seeds, or flowers are to be boiled, and so put under the sweating chair, according to the nature of the disease. In this chair the sick is to stay, if he can bear it, for half an hour, sweat flowing from every pore. Then, covered with a blanket, he is to step into the next bed, where he is to be covered, and then dry rubbed. Some use *fumigations* of *Cinnamon*, *Frankincense*, &c. In resolutions of the nerves,

in



in Elephantiasies, dropfies, diabetes, colics, venereal taints, and other diseases, the antients administered sweats procured by hot natural baths, and successfully.

Fumigations of Cinnabar, frankincense, opi-<sup>Fumigati-</sup>um, &c. were occasionally used. Aretæus and <sup>ons.</sup> Aetius put hyprodics and diabetics in a barrel, with their heads out, and stoves underneath. These *Doliaria Vaporaria* are mentioned by Ga-<sup>Doliaria.</sup>len, Aretæus, and Archigenes. Aetius mentions an *Oven* into which they made the poor sit <sup>Ovens.</sup> on a brick with their head out, having first swept out the coals. This (I am told) is a common practice among the *Indians*, in intermittent fevers; they first sweat heartily in such a stove, thence they run and plunge headlong into a neighbouring river.

“Nos vero (says Baccius, p. 399) in frequenti usu, simplici *tina* contenti fumus, vulgo dict. *Semicupio*. In cujus margine æger circumvallatus nudus affidet, suppositaque *patina* æneis incoctis, vel aliquo ejus generis pulvere asperfo. Vel quod paratu facilimum & utile, laminis ferreis igne candentibus suppositis, ac aceto conspersis, ad sudationes, cujus remedii legimus usum Alex. apud Trallianum, lib. i. c. 16.”

## CH A P. VII.

### *Of Illutation.*

GALEN (in his book of *Simples*) says, *Omnis terra vim possidet desiccandi*. Every Bath has a drying quality. In *Alexandria*, and *Egypt*, they use their common mould for this purpose of drying. “I have seen (says he) hydropics, and people affected with diseases of the spleen, who, by anointing their ankles, thighs, elbows,

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"bows, arms, back, sides, and breast with  
 "Egyptian mud, were much relieved." This  
 clay cures those lax tumors which the Greeks  
 call *oedemata*. "I have knowen some grown  
 "hydropic by excessive loss of blood, receive  
 "manifest benefit. I have knowen continual  
 "aches cured in this manner." Thus far Ga-  
 len.

*Virtues.*

The *Terra Egyptiaca* (by the overflowing of  
 the Nile) imbibes saline, nitrous particles, and  
 may, therefore, be preferable to other earths; so  
 may the *Mud*, thrown on the banks of rivers.  
 The mud that is found at the bottom of mine-  
 ral baths is also saturated with mineral particles.  
 Lib. xxxi. Cap. 1. and 6, Pliny says, *Utuntur cæ-  
 no fontium balnearum naturalium; illitum sole in-  
 crescat*. In Galen's days the mud of St. Bartho-  
 lomew in *Patavinis* was famous *ad emolliendum  
 duras partes, ad calefaciendum, ad siccandum, ad  
 discutiendum, solvendumque contumaces, in aliquo  
 membro, impaſſas materias, infixosque parti dolores*.

*Manner.*

Page 78, Baccius says, *Eſt autem Lutationis uſus  
 duplex, poſt Balnei uſum plures diei, & cum ipſo Bal-  
 neo decem vel quindecim dies, & uterque eſt laudabi-  
 lis*. He adviſes thoſe who would confirm any  
 part weakened by chronical diſeaſes, or who  
 would diſcuſs tumors, or extend contracted  
 members, firſt to prepare themſelves, then to  
 bathe for ſome days, and then to beſmear the  
 part affected with the mud *actu calido, & quale ex  
 ipſo fonte ſumitur*. He orders them to go into  
 the Bath early, to uſe the mud when the ſun be-  
 gins to grow powerful, *ſole invaleſcente*; as it  
 dries to change it, defending the head and the  
 reſt of the body, mean time, from the ſcorching  
 heat. Or to put a new coat of mud over the old,  
 till, after two or three hours, it falls off of its  
 own accord, or is ſcraped off; then bathe, rub  
 dry,

# BATHS ANTIENT and MODERN.

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dry, anoint, and breakfast. After four hours, he orders the same process, *ad lutum redeat eodem tenore*. In the evening he orders bathing or sprinkling, *ut una aqua, unaqua opera, & lutamentum abluant, & membra lutata confirment, mox inungant, & cœnent*. For *Anasarca's* Aetius orders *illutaments* mixed with *discutients*, and then bathing. Montagnana, for obstinate contractions, or contractions, orders *illutaments*, and afterwards unguents. For swellings of the spleen, and other inflations from thick cold impacted phlegm, he orders *illutation* of cinereous or salt clay. For burns, or scalds, such *illutations* are commended.

Diseases.

There are some who have made artificial *illutaments*, such we find in Aetius. "Ad tu-  
mentes corporis partes, & Atramenti futorii  
partes quatuor, Alum. scissi madefact. p. sex,  
luto fusco subibigito, & ægro nudato, ac præ-  
foro, corpus illinito, deinde lavato, ac rursus  
foveto, linito, obluo, quod cum ter feceris,  
cum rosaceo inungito, ægrumque per totam  
noctem inungito, reperies sanum."

Artificial.

Among artificial *illutaments* we may reckon the *Cæromata*, a composition of powder, oil, and sweat scraped off the bodies of the *Athletæ*, and saved for use, according to *Pliny* and *Suetonius* in *Nerone*. Wrestlers anointed their bodies, that they might the more easily evade the grapplings of their antagonists. These again threw dry powder on their bodies, that they might the more easily lay hold, which custom *Statius* describes,

Cæroma-

ta.

*Postquam olea gavisâ cuti, petet æquor uterque  
Procursum medium, atque haustu vestitur harena  
Tum madidos artus alterno pulvere siccant  
Collaque demersere humeris, & brachia late.*

These

## BATHS ANTIENT and MODERN.

These scrapings were, according to Pliny, sold at a monstrous price. *Notum est octogenis sextertius strigmenta olei vendidisse.* Dioscorides says, *Quæ in Balneis colliguntur sordes molliunt discutunt.* Clefts and swellings of the fundament, *utiliter iis inunguntur.* The scrapings which were gathered in the Palestræ, he says, *articulorum concretionibus imposita profunt.* In hip-gouts these he put on by way of a poultice. *Nec minus calfaciunt quæ in Gymnasiorum parietibus unguinis sordes hæserunt.* *Panos difficile suppurantes dissipant, desquamatas præterea, & in veritatis ulceribus valde accommodant.*

## C H A P. VIII.

## Of Saburration, Insolation, &amp;c.

*Saburrat-  
tion.*

**S**ABURRATION was a species of Bathing in antient use. The body was buried in sand and exposed to the sun. Saburration, or Arenation is of kin to Illutation, and useful in cold moist tumors. *Solum enim sulphureosum natura est aluminosumque & ferreum, callidum sponte, & actu siccissimum, quo utilissime hodie ægrotantes, præsertim hydropici saburrantur,* says Baccius, p. 79. *Est enim hoc fossiculum sabulum siccæ pariter consistentiæ, utpote quod subterraneus calor in cavernis diutissime adest,* says Vitruvius. This is a practice among the *Africans* at this day.

*Manner.*

The manner is this. A servant gathers sand heated and dried by the sun, with which he covers the body. If the sea is near, its sand is to be preferred, as it is lighter, drier, and hotter, by reason of the salts with which it is stored. If this cannot be had, river-sand, or pit-gravel may be used.



Saburrations were used, by Avicenna, *ad car-Virtus.*  
*diacos, cum sciz. ob atram bilem in ventriculo ægri*  
*conficiantur. Ad Elephantiasim, bibitis antea aquis*  
*naturalibus. Juvant quoque podagricos, præsertim ut*  
*ne tumores in topbos coalescant; sic & cæteros junc-*  
*turarum dolores, modo sudent. Quidam ex sale, ni-*  
*tro, & oleo pultem conficiunt, eaque infricant hydro-*  
*picos; nam modico prius humore educto, saburratione,*  
*sole, & siti, cibis desiccantibus eos maxime juvari*  
*comperimus, says Paulus. In Leucoplegmatis*  
 Aetius greatly recommends rolling in sand, espe-  
 cially if *Fullers earth* is mixed. He adds, *Qui-*  
*dum enim in hoc vaporatiorum genere se ad solem ex-*  
*ponebant, partim non unctis, & sine alio studio, quod*  
*de Plinio secundo accepimus; alii etiam uncti, alii*  
*desidentes, aut decumbentes, alii stantes, & deambu-*  
*lantes, currentes. Ex decumbentibus aliqui in strato,*  
*aliqui super corio, aliqui in barena, aut sale decum-*  
*bebant.*

Pliny the younger tells us that the antients *Sun-fur-*  
 made use of *Helio-camina*, or *Sun-furnaces*, for *naces.*  
 private sweating, Vaporaries contrived so as to  
 concentrate the rays of the sun. Baccius recom-*Salt-*  
 mends rubbing with salt and water in the sun, or *baths.*  
 before the fire. This sweats profusely, and  
 quickly, taking care to cover the head. He *Wheat-*  
 recommends rolling in sand, dust, salt, and wheat *baths.*  
 toasted. *Si salis sit copia, laudatissimum præ cæteris*  
*Saburrationum generibus est, tenui sale substrato homi-*  
*nem cubare. Aetius orders the depth of the bed*  
 of salt to be not thinner than three hand-breadths,  
 for if it is not deep, the heat soon dissipates.  
 Galen gives an example of a *hydropic* buried  
 “ in a heap of dried wheat, who rose without  
 “ the least swelling.”—“ Pliny gives another, *Cases.*  
 “ of Sext. Pompeius, who, being taken with the  
 “ gout, buried his legs above the knees, and  
 “ was thus cured, using the same remedy af-  
 “ terwards

Leather  
baths.

“terwards with success.”—Baccius (p. 81.) says, Those who expose their bodies to the sun, lying on leather, receive no small benefit, viz. hydropics, ischiatics, nephritics, paralytics, elephantiacs, and those swelled. *Cæliacis quoque, & qui circa vesicam veterem morbum patiuntur, ex frigidaque temperie convulsis convenit; & adhuc amplius feminis quæ ex uterinis affectibus strangulantur, & quæ alba uteri fluxuque infestantur.*

Manner.

The leather must be large, anointed with oil, extended on sand passed through a sieve. When this has been well heated in the sun, the patient must lay down, with his head covered with a sheet. He is to turn himself now and then. The face is to be continually wiped. He says he has seen patients, in sudden contractions, especially from wounds, covered with bran out of a hot boiler, and successfully. There are others who lay the sick on beds of drying digesting herbs, pennyroyal, sage, southernwood, wormwood, chamomel, and the like, in cachectic, hydropic, relaxed, convulsed, trembling, cold, and moist affections. He concludes, *Mirum est enim quantum hæc ipsa per somnum rescissent* (ut constat teste Archigene, & apud me) *quosdam in his pro morbi condecencia obvolutos, a somno penitus surrexisse firmos.*

Herb  
Baths.

## CHAP. IX.

### *Of the Seasons and Hours of Bathing.*

**A**MONG antient Physicians there were not a few, who finding Bathing answer their expectations one year, and fail another, assigned various causes. Some had recourse to occult causes, some blamed the stars, some the bissextile years, some pestilences, some earthquakes, and

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and others any cause that served to serve for a pretence or excuse for ignorance.

The time of bathing was morning and evening in Galen's time. *Mane an vespere utilius?* <sup>Morning</sup> *Matutinum tempus omnes conditiones requisitas com-* <sup>and even-</sup> *prehendit, quietem corporis, somnum prægressæ noctis, ventrem inanem, stomachum jejunum. Ac utile idcirco est mane levare, ei maxime qui simpliciter lavari intendit, cavendo ejus diei incommoda. Alioqui (servatis, ut aiunt, servandis) vespertinas lavationes utiliores existimo. Nempe quæ ad instituta illa antiqua Thermarum, & ad munditiem corporis, & etiam ad sanitatem, multis superfluis, per diurna negotia, ad summam cutim excitatis, ac per balneum vacuatis, ac deterfis. Simul atque securis nobis ab incommodis aeris, cum subinde domum redeundum sit, ac cessatio a balneo motu cœnandum, & de more quiescendum.*

Among the Romans, the hours of bathing were settled by public consent. Before the days of Alexander Severus, the Baths were never open before morning, and always shut before sun-set. The Romans divided the artificial day, in every <sup>Roman</sup> season, into twelve hours; their night they divided <sup>hours.</sup> into watches. Their hours were thus unequal, longer in the summer, because the days were then longer, and shorter in the winter; and so proportionally for spring and autumn. We are not therefore to think that they bathed soon after meals; for such bathings produced distensions, flatus, heaviness. Chyle incocted is hurried every-where by bathing. The morning therefore was the time of bathing, or about sun-set before supper. The Romans made but two meals, breakfast and supper. We find mention indeed of dinner, but it was only a bit of bread soaked in wine, the same which the French now use for breakfast. The old Roman having refreshed himself with a moderate breakfast, spent a great part of the

## BATHS ANTIENT and MODERN.

the day in business. That the eighth hour of the day was set aside for bathing, we learn from testimonies public and private. Tully, writing to Atticus, of Cæsar speaks thus. *Ambulavit in littore, post horam octavam in balneum introivit, unctus est, accubuit, edit, bibitque opipare.* The Emperor Ant. Pius was said to be, *ad curam corporis promptissimus, sub brevibus, sole occidente in palæstram ingressus; subinde oleo perunctus lavari erat solitus; hora nona, aut, ad summum, decima.*

Bathing was generally used after exercise, sometimes to seven times a day; in which case there was no respect had to the hour. We read of *Lavationes meridiana, antemeridiana, & vespertina.* We read also of *Lavationes nocturnæ*, for which purpose there were brazen lamps hung up, after the Greek manner, called *monomixi, dimixi, trimixi, &c.* according to Athenæus. Martial has partly divided the Roman day into its several occupations.

*Prima salutantes atque altera continet hora,  
Exercet raucos tertia caufidicos.  
In quintam varios extendit Roma labores  
Sexta quies lassis, septima finis erat.  
Sufficit in nonam nitidis octavo palæstris,  
Imperat extructos frangere nona toros.  
Hora libellorum decima est (Eupheme) meorum,  
Temperat ambrosias cum tua cura dapes;  
Et bonus oethereo laxatur nectare Cæsar,  
Ingentique tenet pocula parca manu.  
Tunc admisse jocos: gressu timet ire licenti  
Ad matutinum nostra Thalia Jovem.*

*Time of  
day.*

In Q. Elizabeth's days, Bath-water was used chiefly used for bathing. A month or six weeks course, spring and fall, was the custom. Dr. Jones



Jones published his *Bathes Ayde* in the 1572. He expresses himself thus.

“ For the time of staying in the Bath, it must be according to the quality of the Bath, and the toleration of the patient. In a hot Bath, an hour or less may be sufficient ; in a temperate two hours. For the time of continuation there can be no certain rule, it must be according to the patient’s amendment, sometimes twenty days, sometimes thirty, and in difficult cases much longer.

“ For the time of the year, the Spanish and Italian authors prefer the *Spring* and *Fall*, and so it may do well enough in hot countries. But with us I hold the months of *May*, *June*, *July*, and *August* to be best. I have persuaded many hereunto who have found benefit ; for, in our *Springs*, and after *September*, our weather is commonly variable, and apt to offend weak persons, who finding it temperate at noon, do not suspect the coolness of the mornings and evenings. Likewise, in the Bath itself, the wind and rain makes the water much cooler at the surface than the bottom.”

In the year 1668, Lord Stafford asked Dr. Pierce, *What do you make of your Baths in the winter ?* To which he answered, *We citizens then have leisure to use them ourselves.* His Lordship went away that time, and recovered ; but finding his pains return, came back in October, and bathed on till February.—This introduced winter-bathing.

Where springs rise superficially, the heat and virtues of the waters are, doubtless, greatly altered by moisture, heat, or cold. But the Bath-waters spring up from such a depth, that they never were known to vary in their degree of heat, quality, or quantity. As they bubble up, the

*Distinction of seasons absurd.*

## BATHS ANTIENT and MODERN.

the quicksilver rises exactly to the same degree of heat, summer and winter. The Baths are liable to the influence of external injuries, and must continue so to be till they are covered. But (for the reasons assigned) distinction of *Seasons* is a relief of ignorance, superstition, and prejudice.

To the aged, cold, phlegmatic, and enervated, the summer season is doubtless the properest for bathing. Such ought to go to bed early, so as to bathe before six in the morning. The Bath ought to be temperate, and stay proportionable. In warm weather patients need not be put under that strict confinement which is necessary in colder seasons.

*Caution.*

Those who are obliged to bathe in the winter, act irrationally if they expose their bodies to the external air for that day. Every bathing creates a fever of some sort, which ought to be allowed time for perfecting its own crisis. Volumes might be filled with examples of men who fool-hardily counteract reason. Some trespass with impunity; others pay dearly for their folly. He who would copy after *Lord Winchelsea*, must be born with such stamina, and count as many winters. The *Guides* bathe every day, dress immediately, go abroad, and rarely suffer. Constant bathing may be the reason. If they catch cold, their pores are opened again before the blood can acquire an inflammatory lentor. Add to this, they are born of sound parents; nor have their constitutions been ruined by intemperance, sloth, or effeminacy. Dr. Oliver (in his *Essay on the use and abuse of Warm-Bathing in the Gout*) gives one instance of abuse which may serve as a memento to the giddy and unthinking. "Governor Fitz-Williams, one of the most robust, after having been in the Bath, walked to *Lincomb* in a cold day. He  
" returned

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“ returned, with a pain in his side; a pleurisy  
 “ ensued; that was eased by copious bleedings;  
 “ but, a peripneumony succeeded, which eluded  
 “ the power of art. He fell a martyr to fool-  
 “ hardiness.”

IN Germany, artificial hot mineral Baths are common. Britain abounds with cold mineral springs, while warm artificial Baths are hardly known. The common method of preparing such Baths is to put three pails of cold mineral water into a copper caldron closely covered, which, with a quick fire, is made boiling hot. This is poured into a bathing-tub, adding as much more of the same water cold as is sufficient to bring it to a heat as near as can be to that of the blood in a healthy state, 96 degrees. In this tub, the patient sits on a seat made of linnen rags, so as that the water reaches to the pit of the stomach. The tub together with the body is covered up to the chin with blankets. In his book on *Chalybeate Waters*, Dr. Linden has exhibited a drawing, and given a description of an ingenious apparatus of this sort, worthy of the attention of those who practise at cold springs.

## C H A P. X.

*Of Bathing in Acute Diseases.*

BACCIUS laments the silence of writers on the subject of curing particular diseases by *Bathing*; he imputes it to negligence or ignorance. *Quam partem miror nostros medicos seu negligentia, seu inscitia omisisse, cum, in tota re balnearia, nulla sit pars magis necessaria quam ista quæ de metodo curandi, ac de propriis ad quemque morbum balneis præcipit.* Pag. 97.

G

To

*Requisites.* To the right application of Baths there are two things indispensably necessary. 1. The Director ought to have a physical and experimental knowledge of the Bath. 2. He ought to be master also of the disease, its cause, and seat. Natural baths are useful six ways, by *drinking, bathing, pumping, vaporation, illutation, and arenation*, as we have already seen. These particular methods are not all necessary towards the cure of every disease. Some yield to one, others to more.

*Intentions.* In bathing, the common intentions are, To alter, evacuate, or strengthen. In disorders of the first passages, drinking seems to be first indicated. Some mineral waters disburthen nature of her superfluities by vomit, stool, urine, and perspiration. Bathing, sweating, pumping, and lutation, as local applications, digest, dissolve, and evacuate the relicts of the fumes. Drink and bathing thus rationally conspire in removing the cause, and restoring health. There are hardly any diseases but what may be relieved by certain waters. To the various ailments of man, Providence has variously appropriated healing fountains. In the choice of waters, regard must be had to the disease, and constitution. Some Baths ought to be of a relaxant quality only, moderately warm. In lax, cold, obstinate disorders, hotter are required.

*Hot Baths cool.*

Whether Thermal waters cool cannot positively be affirmed, nor denied; for, water naturally moist and cool may (by the mixture of minerals) be rendered heating and drying. Experience however tells us that natural baths cool by discharging the diseased heat. There are certain waters which, by the nature of their contents, cool. Such is the nature of the *Seltz*-waters, and of many



many others. Natural hot baths cannot safely be administered in hot affections, fevers, inflammations, or hot tumors, in their inflammatory state. But, these disorders may be prevented by temperate baths. In fervors of the liver, or any particular viscus, Baths prudently applied avert phlegmons, abscesses, and other dangerous consequences. For internal hot affections of the liver, reins, uterus, bladder, certain temperate waters were used internally and externally by the antients, such as the nitrous at *Baia*, *Puteoli*, the *Asculane*, &c. Hot baths cool by diverting the humors from the center to the circumference, by discussion, and revulsion.

1. So naturally prone is the mind of man to *Fevers*: things new, that some have even dared to try poisons on their own bodies. Nor are there wanting Physicians who affirm that *Fevers* have been cured by natural hot Baths. *Contra vero horum audaciam, in universum, in omni febre, adversaria sunt naturalia balnea, unica hac ratione, quia omnia talia plane calefaciunt ac exsiccant*, says Baccius, p. 303.

In the cure of *Fevers* by Baths, we are al- *Cautions*: ways to think of simple water heated by art to the degree of the heat of the human blood. Temperate artificial baths moisten and cool. Warm bathing draws the heat from the center to the surface; hence we see men make cold urine after coming out of hot Baths. *Temperatarum itaque vis calida & humida est, aperiens, penetrans, digerens, semper humectans; quare ubi quis sicco corporis affectu detinetur, ut in febris, potest ipsarum usu utilem madorem solidis partibus immittere, urinas albumque laxare, ac sudores elicere*, says Baccius, p. 404. He lays down one certain condition, viz. that those effects are to be expected from bathing in simple fevers only. If erysipilas, lo-

## BATHS ANTIENT and MODERN.

cal inflammation, swelling or læsion of any particular viscus or bowel attend the fever, bathing may do more hurt than good. Rhasis, from experience, affirms that warm bathing did mischief always in putrid fevers. From this principle it was that the antient physicians were cautious of baths in certain fevers. They always had respect to the concoction of the humors, to the habit of the sick, and to the strength. Galen (in bathing) always paid attention to three things. 1. He never ordered bathing to patients who had a dread of bathing. 2. He took care that none of the principal viscera were hurt; and lastly that there was no great quantity of crude humors in the first passages. For these reasons therefore he never advised bathing in the beginning, or augment, but in the declension.

*Simple  
fevers.*

2. Besides the general precepts already mentioned, the wise antients varied their baths according to the nature of the particular fever. They made the water *minus temperata*, *temperata*, and *temperatissima*. In simple Diary fevers occasioned by fatigue, heat, drowth &c. they rubbed the body with ointment, put it into the bath, not to sweat. In simple diary fevers brought on by grief, anger, watching &c. they were more careful in anointing than in bathing. In Diaries with heaviness and catarrh, they proceeded not to bathing before they saw signs of concoction. In Diary fevers which continued for some days, if, on the third day, there appeared no sign of crudity in the urine, or otherwise, Galen ordered the patient to bathe first in warm water, and then immediately in cold.

*Putrid  
fevers.*

3. In *putrid fevers*, Celsus tells us that they used the bath in the time of remission. If they intermitted not, and were slow, they bathed, provided no material symptom forbade. When the fever

## BATHS ANTIENT and MODERN.

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fever kept a certain period, they bathed any time of the intermission, or before the shivering, or after the fever, or when the fever was alleviated most, when there was no intermission. The most common indication for the Bath in Galen's school, was when there appeared a concoction in the urine.

4. In *Tertians*, Galen ordered simple warm water, *humectandi gratia*. *Quod vero Tertianarum pervigilium est, in his, non expectata concoctione, tuto balneum adhiberi potest, tum quia biliosus humor qui Tertianas excitat, ad exercitationem in promptu existit, tum quia corpus humectatur, educto per balneum bilis fervore.* In bastard *Tertians* he defers bathing till signs of concoction appear, *utpote quæ a crudioribus humoribus pendent.*

5. In *Quartans*, Galen (writing to Glaucō) says, *Quartanarios a frictionibus, ambulationibus & balneis non abstinendos.* Hippocrates (in his second book *De Morbis*) says, *In Quartanis, post aliquot medicamentum aggressus, si videbitur adhuc prosequi febris, multa calida aqua lavandi.*

6. In *Ardent fevers*, which arise from the same cause with *Tertians*, *temperatarum lavacra conveniunt, dummodo moderata sit febris, vires robustæ, & signa concoctionis appareant, nec ullæ ex principalibus membris insigni aliquo vitio affectæ. Verum si æstiosa ejusmodi febris qualis a Galeno (de ratione victus) notatur, ex salsa pituita putrefacta, adversissimum Balneum.* Neque enim pituitosus humor, neque biliosus per cutim vacuari est idoneus, propterea quod longa coctione egeat. In fevers arising from *Erysipilas*, in totum, a balneo abstinendum. Nor does the Bath agree with *Semitertians*, nor *Syncopal fevers*, immo his aer vel nimium calidus, vel frigidus, adversissimus, teste Paulo. Nor does bathing agree with those in which the belly is first bound, then loose, *pituitæ motus, contra spem salutis,*

*Hætic  
fevers.*

*tis, ad cutim coactus, magnum detrimentum adfert. In Continents, where the humors are equally putrescent, ægros non oportet, nisi soluta febre lavare.*

7. In true *Hætics*, Galen says, *Omni tempore lavacrum idoneum.* But he says, If *Hætics* do not immediately step from the hot water to the cold, *nihil juvantur.* He observes, *quod tamen vidi Medicos non vulgares relinquere.* He bitterly inveighs against the rashness of those, who prefer their ignorant fears, and crude opinions, *veterum institutis probatis.* He boldly orders hætics a *calida, in frigidam totos confestim esse immergendos; Frigida enim constringendo corpus, & constipando, impressam jam in membris aqua qualitatem, humiditatemque, ex calido solio temperatarum, tutissime ad intima usque viscera propagat; cum alioqui salubre non sit frigida substantiam, neque qualitatem integram*

*Manner.*

*ad ea usque pertingere.* Galen's method of bathing hætics is particular, *Method. Med. Lib. x. Cap. 10.* "Volo æger in Balneum super lectulo de-  
"portetur, in cujus prima e tribus nudetur, &  
"transferatur in sindonem calentem. Inde in  
"secundam portetur. Est autem hæc media  
"domus non tantum situ media, sed etiam tem-  
"perie, tanto sciz. prima calidior, quanto est  
"tertia frigidior. In hac domo oleum tepidum  
"esto, quo æger super sindone illatus perfunda-  
"tur. Hoc facto ducant hominem ubi lava-  
"crum est. In ipsa vero aqua calida, sindone  
"sustentus, bis terve totus immergatur, nulla  
"vero aquæ infusio adhibenda, ut in aliis.  
"Mox inde e ductus, in frigidam semel totus  
"tingatur, at inde celerrime retrahatur, & alia  
"sindone tegatur, tum in lectulum collocetur;  
"ibi spongiis detergetur, deinde mollibus lin-  
"teis blandissime contrectandus. Postea un-  
"ctus & vestibus amictus, super lectulo in do-  
"mum



## BATHS ANTIENT and MODERN.

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“mum suam reducendus, & apto domum cibo  
“nutriendus.”

Baccius (pag. 306) proposes that the air of the Baths should be temperate, that the floor and walls should be sprinkled with warm water. The sick is to sit long in the warm water without perfusion, or motion. From this he is immediately to leap into the cold. There he is to be sprinkled with cold water, and, coming out quickly, he is to be rubbed dry, then he is to be put to bed, and anointed, *oleo amygdalino, vel violaceo, maxime circa spinam, dorsum, & pectus, & quiescat.* This is the method which Galen followed in *febre marasmode*. He mentions one *Case* case in particular. “*In summam venerat maciem, longo tempore, tum decolor, tum viribus imbecillis, squalidus, omnino confectus moribundus. Hoc more hunc preter spem restitui.*”

8. The good effects of Warm-Bathing in *pleuri-* *Pleurifies,*  
*tic, peripneumonic, and paraphrenitic* cases are con- *Peripneu-*  
firmed by Oribasius, *Collect. med. lib. x. cap. i.* *monies,*  
*Concoctis jam affectionibus, balneum citra periculum* *&c.*  
*adhibetur, quum etiam ad expurgationem sputorum,*  
*quæ pleuriticorum, & peripneumonicorum thorace &*  
*pulmone continentur, maxime conferat. In iis ergo*  
*qui sic affecti sunt balneum iterari nihil prohibuerit.*

9. Dr. FISHER has convinced us of the success *Small-pox.*  
of bathing through all the stages of the *Small-*  
*pox.*

*In hoc statu (i. e. in statu suppuratorio) curan-*  
*dus puris ad exteriora exitus, quod fit laxando cutim*  
*fomentis tepidis, laxantibus, assiduo & laboriose reno-*  
*vatis,* says Boerhaave. In fevers in general, he  
adds *Emissaria aperiuntur solvendo impaetum, lax-*  
*ando obstructum; id fit balneo, fotu, frietu, abradi-*  
*one pilorum, mundatione cutis.*

10. In Dr. Gilchrist's Treatise on the Use of Sea Cases  
*Voyages in Medicine,* we find an Appendix concern- *acute.*

## BATHS ANTIENT and MODERN.

*ing Bathing in fevers*, which contains *Cases* sufficient to recommend the practice.

1. " A young man, on the sixth day of his fever, was restless, delirious, pale, with his eyes sunk and muddy, his features sharp, skin dry and hot, with a shrinking of the solids. His pulse was low, his tongue was parched, he passed his urine insensibly, and threw up every thing. I put him into a bath prepared of garbage and bran, which he bore easily, fell into a composed long sleep. His skin became soft and cool, with a kind moisture. Six days running he was bathed and recovered."

2. " A gentleman sixty and upwards, corpulent, and a free liver, was seized with a fever. I saw him first on the eleventh day, when he was delirious, insensible, sleepy, raving, and muttering, with a constant hot sweat, and subsultus tendinum. His pulse indeed seemed full and equal; but this, we know, is not always to be trusted to, other bad symptoms increasing. I applied leeches to the temples, I cut a seton in the neck, and put him into a bath, after which he slept long and sound, his skin was cooler, with only a breathing sweat, and, next morning he appeared a little sensible, still more so after every repetition for three or four times, when he was out of danger."

3. " My advice was asked for a woman who had been more than a month in a fever. For the first fortnight she slept none, for the second she was delirious with a disposition to sleep, out of which she started frequently, with a subsultus; at last she became quite insensible. She was bathed for a quarter of an hour only; after which she lay pale, faint,

" and

“ and sleepy for an hour or two. By a second  
“ bathing all the threatening symptoms vanish-  
“ ed. She relapsed, and, by the Bath, recover-  
“ ed, but very much reduced. She was al-  
“ ways faint in and after the bath, owing to ex-  
“ treme weakness. I changed the Bath with  
“ herbs for one of broth, which caused an itch-  
“ ing all over the body, and sensibly strengthen-  
“ ed and restored.”

4. “ A woman, the fifth day after lying-in,  
“ fell into a continual fever, which increased to  
“ the ninth or tenth, when I first saw her. She  
“ was delirious, restless, catching at every thing,  
“ with profuse sweat, with one of the very worst  
“ of pulses. Without the smallest hopes, I  
“ bade them try the Bath, if they thought it  
“ worth the labour, I could think of no other  
“ means of relief. She was bathed, became  
“ more sensible, and slept, but was still deliri-  
“ ous. The Bath was, every day, repeated,  
“ she recovered, but it was long before the af-  
“ fection of her head went entirely off. In no  
“ case have I ever seen one so evidently rescu-  
“ ed from imminent death.”

5. “ One complained for some days of a  
“ cough, disorder of his stomach, and oppression,  
“ with an obscure delirium, which soon increas-  
“ ed to a furious raving. He called incessantly  
“ for drink, but, when it was offered, showed  
“ marks of horror, dashing it from him with  
“ violence. When he tasted it, he spat it out,  
“ threatening to bite those who held him. No  
“ relief obtained from other trials, he was bath-  
“ ed. In an hour or two he fell asleep, slept  
“ for four hours, and awaked very sensible. He  
“ went into the bath next day voluntarily.”

Our author mentions two cases in which it  
failed ; in the one it was rather thought to in-  
crease

## BATHS ANTIENT and MODERN.

crease the delirium, it was tried but once. In the other, a low fever, it was once tried without any sensible effect. From the relation of a friend to whom he recommended the practice, he records the following histories. 1. "Mr. M. aged 50, on the eighth day of the fever, became so delirious that two strong men were necessary to keep him in bed. His eyes were much inflamed, his pulse was low and unequal, his tongue rough and black, without sleep. He was forcibly put into, and held in a warm bath for twenty-seven minutes. From six in the evening, he slept till six in the morning, without stirring but once to drink, with a plentiful sweat. When he awaked, he was more composed, and sensible, at times, with a better pulse. Next night he was again bathed, after which he slept ten hours, when he awaked sensible, with a regular pulse. The third time, he walked into the bath. By five bathings, he was recovered."

2. "A strong young woman had the same fever. I saw her first on the thirteenth day. She had been delirious five or six days, and slept almost none at all that time. Before, she was with difficulty, held in bed, but was now much emaciated and weak, her eyes were inflamed, her tongue black and parched, her pulse low and tremulous, with an universal trembling. She was bathed near half an hour, after which she slept ten hours in a plentiful sweat. She bathed six times in all, with visible benefit, and total recovery."

3. "I saw another young woman on the ninth day. Her head was affected, she raved, was restless, her eyes were inflamed, and her pulse was unequal. By the very first bathing, she slept well, sweated moderately, and was sensible

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" sensible next day. By three immersions she  
" recovered."

## C H A P. XI.

*Of Batbing in Chronical Disorders.*

FOR the very reasons that natural hot baths *Baths dif-*  
are not indicated in acute disorders, they *ferent in*  
are proper in chronical. By their properties of *degree of*  
heating, drying, and strengthening, they are use- *heat and*  
ful not only in cold affections, but in cold con- *virtues.*  
stitutions, and members. As the natures, com-  
plexions, and members of bodies possess differ-  
ent degrees of frigidity, provident nature has  
therefore supplied us with Baths which possess  
antidotes to these different degrees. Baths heat  
not all by one tenor, some more, some less; so  
that they may be differently applied to the dif-  
ferent purposes of medicine. There are sul-  
phureous waters so hot that they excoriate and  
exossate animals in a moment. Such was the  
water of a pit at *Puteoli*, which darkened the  
sky, and killed birds with its steam. The waters  
in *Pannonia* were called *Purgatorium*. In *Caria*  
and *Egypt* we read of burning fields, and rivers  
of warm water issuing forth. Such is the new  
Bath at *Aix la Chapelle*. Such are the springs  
of *Jamaica*, *Nevis*, and *Montserrat*. These are  
cooled before they are used, or tempered with  
cold water. Their vapors may be improved  
for excellent purposes as *Sudatories*, or for the  
purposes of Pumping. These Baccius classes in  
*gradu summi caloris*.

The Baths of *Caia*, *Bussetum*, and the *Crucia-*  
*torum Viterbii*, he classes in *tertio caloris gradu*,  
and allows their use in *frigidis passionibus*.

In the *secundo caloris gradu*, he ranks baths  
more temperate, such as the *Aquæ Sancti Asculi*,

## BATHS ANTIENT and MODERN.

& Petrioli, such as the *Japigia* in *Calabria*, such as the *Thermæ Burmenses*, and *Brigenses* in *Valeffis*, such as the *Bathoniæ* in *Anglia*, quæ aquæ calidæ diætæ a Romanis qui eas instituerunt.

In the first degree of heat he places the *Balnea Sancti Cassiani*, the *Corfeni sub Luca*, cum *Duccia* admodum hodie celebri & sudatorio, the *Regina* & *suave balneum in Pisa*. These, though they spring up actu fervida, yet they hardly differ in drinking, from sweet water, vix tamen a dulcium potu differunt. In this class we may rank our *Bristol* and *Matlock Baths*. Such as he calls *probata in hæticis, infantium quoque vitiis*.

In cold affections Baccius not only recommends hot natural Baths, but their appendages also, Sudatories, Vaporaries, Ducciæ, and Arenations, &c. These Arenations are particularly mentioned in the *Baian Baths*, in those of *Puteoli*, in the island *Aenaria*, in *Sicily*, at *Tralles* in *Cária*, at *Hierapolis* in *Phrygia*, in *Chalcide*, & aliis locis. Communiter ad frigidas omnes passiones atque humidas, juncturarum præsertim atque membrorum comprobatae inveniuntur sudationes. Ubi majore discussione opus est, Arenationes, quales in multis Balneis commemorantur. He adds, faciunt egregie in artuum doloribus ubi fluxione tentantur. Thus far of Chronical disorders in general; we now proceed to affections of particular parts.

## I. Of the Head.

Disorders  
of the  
Head.

In applying Baths to parts affected, one distinction ought perpetually to be before our eyes, viz. Whether the diseased part be essentially concerned, or by consent only. This frequently is the case in disorders of the head which suffers from faults of the stomach, uterus, liver, &c.—In preparation as well as cure, our

Useful  
Cautions.

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aim ought to be constantly directed to the original affection. Those who never studied the principles of the art, direct their endeavours to the most alarming symptoms; thus they change curable disorders into deadly. They create symptoms which nature never would have produced. Every physician's practice may direct him to Examples.

The nature and quality of the humors are no less to be inquired into; whether they be cold or hot, few or many; for, in hot temperaments, fluxes of the humors increase on motion. In such cases Celsus advises physicians, *abstinere a balneo, sole, vino, ac venere*. When the flux of humors comes to cease, it ought to be the endeavour of the preservative art to fortify the bowels, head, and other parts, by water internal and external.

In desperate affections, in catarrhal dispositions of the brain, such as impair the offices of life, experience directs us to Pumping, the certain anchor of hope, *tanquam ad certum salutis refugium*, says Baccius, pag. 105. The body (he adds) particularly the head, must first be purged of every excrement, as we have already observed in that chapter which treats of Asperion or Pumping expressly.

## 2. Of Affections of the Nerves.

In affections of the *Nerves*, the same distinction, and the same method of cure are to be used. Whatever has its origin in the head, naturally affects the head. *Perraro enim est quin cerebri affectum non habeant in causa, sciz. catarrhum*. If the catarrh distills on the nerves, it naturally affects sense or motion. But, as particular affections differ somewhat, distinction ought

ought to be made. Regard must be had to the brain itself, the fountain of the nerves. Preparation is as necessary before pumping as before bathing. Baths are not to be administered in incipient fluxions, but in inveterate. When the fluxion distills on the nostrils, palate, or stomach, the bregma is to be pumped by way of discussion. This is Galen's doctrine. Or, con-spersion is to be used on the occiput, and down the spine, in patients afflicted with tremblings, tetanus, in paralytics, convulsed, or those who suffer distortions of the mouth, eye, &c. *quæ omnia vitia frigida distillationis soboles sunt*, says Baccius, pag. 107.

Sudatories were recommended in inveterate disorders of this sort by the antients, *qualia in Myrthetis ad Baias*, and many more. They used illutations, insolations, and saburrations in convulsions and palsies. In contractions of the tendons they use warm discutory baths, of which many are mentioned in the same page.

Patients used to illute themselves immediately after bathing; these resolved and strengthened. For parts hard and contracted, vapor-baths were recommended as more penetrating, and anodyne. *Miræ efficaciae produntur in Phrygia & Caria aquae, & ad Hierapolim præ cæteris celeberrima balnea quibus vario terrarum medicatarum genere, ac pinguium, ad artuum atque nervorum contractiones mirifica. Peculiarior autem balnea ex salsis, marinisque calentibus, conspersa epota illutata, ibidem.*—Of Diseases of the Nerves, the reader may expect satisfaction in that Chapter which treats Of Palsy.



3. *In Disorders of the Ears.*

IN disorders of the *Ears* arising from cold de- *Ear.*  
fluxions, such as deafness, noise, pain, swelling,  
running, &c after due purgation, Baccius (pag.  
108) recommends discussory baths. *Eisdem ergo*  
*balneis, ac eadem ratione, aurium morbis medendum,*  
*quas jam capiti, ac maxime a causa frigida applicui-*  
*mus. Quales inter Italiae Duccias sunt tres præci-*  
*pue, Sanctus Philippus, Corsenum, & Aponus.*

4. *In Disorders of the Eyes.*

IN fluxions of the *Eyes*, pains, obfuscations, *Eyes.*  
clouds, involuntary tears, and other deformities,  
Baccius gives a long list of natural hot waters re-  
commended by the antients, and variously used.  
*Calidis oculorum passionibus, quæ mobiles sunt po-*  
*tuum balneæ opitulantur. Tuetur oculos miranda*  
*semper prærogativa Ciceronis cognomento olim scate-*  
*bra ad Baias cum sudatorio ad idem salutarium vapo-*  
*rum. Sudatorium in Minio Hispaniæ fluvio, natu-*  
*ra terræ nulli cedit remedio, conspersis item ex eo na-*  
*turalibus aquis. Multæ aquæ minerales; ferri præ-*  
*sertim citra mordacitatem exsiccant, & utiliter oculis*  
*infunduntur. Sordidas ex antiqua lippitudine lemas*  
*potatæ non nocent, ex medicatis perfusiones exsiccant.*  
With this general advice he concludes, *In every*  
*inveterate affection of the eyes, pumping may be pro-*  
*perly applied to the occiput, where the nerves derive*  
*their origin, pag. 108.*

5. *In Disorders of the Nose, and Mouth.*

IN abscesses and ulcers of the *Nose and Mouth*, *Nose and*  
Baccius recounts the particular virtues of several *Mouth.*  
spaws. In *Ozæna's*, the *Albulæ* take away the  
stink.

## BATHS ANTIENT and MODERN.

stink. For abscesses of the gums, he recommends gargles of salt water warmed. In corroded or lax gums, and disorders of the teeth proceeding from salt fluxion, he recommends *potationes, balnea, discussorias aspersiones*. In confirmed ulcers and *apthæ* he commends gargles *ex aruginibus, & oebra*. *Tonsillas cobibent, Columellæ inflammationem, humoremque restringunt eadem ad villam sub Luca potiones collutionesque*.

## 6. In Disorders of the Breast.

*Breast.*

In deep-seated disorders of the *Thorax* arising from viscid phlegm, such as obstructions, peripneumonies, suppurious asthmas (after the fever and dyspnæa are removed) the waters of *Grotta*, the *Tiguri*, the *Porretanae* are efficacious remedies taken inwardly. Exercise of voice, singing, and reading aloud were practised in the Baths. *Utilis porro & vocis exercitatio, cantus, & clara lectio quod factitasse antiquos docetur in Thermis*. After purgation, warm digestive baths, and even sudatories are proper, such as the *Badeniæ* in Austria, those of *Aix*, provided they have no astringent or drying quality. These assuage the cough by their aperient attenuating quality. There are waters which consolidate pulmonary ulcers, such as the *Plagae, Juncariae, Borrae, Porretanae*, and many more. The *Albulæ* assist those who spit blood. In every affection of the breast, in a word, and, in stubborn coughs, the *Puteolan Baths* and *Ducciæ* promise relief, as also those of *St. Philip* and *Cornesium*. *Cæterum dulcium ac temperatarum aquarum balnea, quatenus in affectibus Thoracis sunt adhibenda, Haemoptoicis, Pleuriticis, Tabidis, & Tussiculosis; sicut ad thoracis dolorem leniendum, etiam in pleuritide utilia fomenta adhibentur*, says Baccius, p. 110.

7. *In Disorders of the Viscera.*

VARIOUS and manifold are the affections of *Bowels*, the *Viscera*, with which natural baths agree more or less, and sometimes not at all. In general, natural baths agree in all diseases which acknowledge obstruction, or debility, or both, for their parents. Natural baths open, resolve, and strengthen. Their chief virtues consist in drinking, being immediately applied to the part; in Baths also which operate by digestion and comforting, under which head Lutations are sometimes directed. The children of *Obstruction* are *inflation, tumor, pain, abscess, ulcer, repletion, heart-burn, jaundice, sand, stone, haemorrhoids*, and all diseases of the *uterus*, all which diseases stand in need of abstergents, attenuants, and digerents. Such are Baths. From debility of the *Viscera* proceed *indigestion, vomiting, flatus, colic, crudity, laxity, want of appetite, flux, cachexy, dropsy, diabetes, bloody urine, fluxes of the womb, abortion, barrenness*, all which manifestly want a digestion of superfluous humors, and strengthening of the parts, both which bid fair to be accomplished by the prudent use of natural hot water internally and externally applied.

As an estimate may be made of the particular affections, as also of the viscera particularly affected, so must there be held a ratio of the operation of the Bath. According to this ratio, warm baths must be directed to cold affections; and, according to the benefit expected, they must be abstergent, or digerent. In hot dry temperaments, baths less warm must be used, nay, there must be some cooling baths. *Passionibus omnibus interaneis (i. e. quae*  
H sub

## BATHS ANTIENT and MODERN.

*sub praedicta veniunt censura) convenire promittunt Aqua de Grotta Viterbi, Tigurique, &c. says Baccius, ibidem.*

In internal affections, Baths are to be recommended, which manifestly inherit a strengthening quality; such are those which partake of iron, such as the Baths of the *Villa Luca, Carpi, Baiae*, all which manifestly absterge the passages, and confirm the relaxed viscera. Where the ailments of the viscera are to be mended, and strength is not so much required, the *Tritolae, Petrae, Plagae, Albulae*, and other waters are indicated. The last are commended by Archigenes, in disorders of the bladder, and uterus. These hardly come up to the first degree of heat. Potations conduce in inflammations of the viscera without fever, in the beginning, or declension of the disease.

In inflations, or indurations which denote excess of cold temperament, digerent and discutient waters are indicated, of a warmer nature, and strengthening, such as the *Balnea Aponum, Corporum, Bassetum, Viterbi, &c.* says Baccius, *ibidem.*

## 8. In disorders of the Spleen.

*Spleen.*

In disorders of the *Spleen*, the same ratio is to be observed, with this difference only. The Spleen is a viscus of more solid substance, generally hurt by disorders arising from cold moist habit; these therefore require applications of a warmer and more penetrating nature, & *quae simul egregie firmant.* In hard oblong swellings of the left hypochondre, Rhasis recommends iron waters, internally and externally, such as those of *Luca, Pisa, Viterbo, &c.* Nor are the Bath-

waters



waters inferior, as they possess a digerent strengthening quality. He recommends Lixiviums also, such as the waters of *Baiae* saturated with ashes and pumix-stones from volcano's. Galen recommends *Illutaments*, salt, sulphureous, ferreous, *aëtu calida*, the same as prescribed in swellings of the joints.

In spleens of hot temperament, and inflammations, the same cautions are to be observed as in those of the Liver.

### 9. In Disorders of the Heart.

THE *Heart* suffers only secondarily, as it is *Heart*. concerned with other disorders. Baths do good in disorders of the stomach, breast, lungs, jaws, &c. But, if cardialgias, palpitations, or syncopes happen to be complicated, Baths are noxious.

### 10. In Disorders of the Testicles and Scrotum.

In hot intemperaments, the same waters *Pudenda*. which avail in disorders of the urinary passages, answer, by their cleansing, and strengthening quality. Lutaments of sulphureous, bituminous, ferreous, salt, hot waters are approved applications in swellings of the scrotum. On this principle it is that poultices made of oatmeal, and the water in which blacksmiths temper their red-hot iron, are in common practice. In ulcerations of this sort, Baccius recommends potations of waters which purge, and strengthen at the same time. Such are the Bath-waters, provided there be no inflammation.

Theorists dread baths in *Hernias*. From the authority of Galen let such learn to distinguish. For flatulent *hernias* warm discussive baths

## BATHS ANTIENT and MODERN.

baths may safely be used, with their lutations. For watery hernias, the same lutations, and baths. For narcotic and very hard hernias, the softest vaporaries, salt fomentations, semicupiums, &c.

## II. In Atrophies.

*Atrophy.*

IN wasting of particular members, from the interception of nourishment, warm baths have been, and are every day successfully recommended. Galen (*De san. tuenda*) orders baths of sweet, i. e. common water heated to the natural heat, he forbids sweating. Baccius (in his fourth book) recommends Baths heated to the first degree, or little more, such as the *Baianae*, *Aquigrani*, *Pisanae*, or such as our Cross-bath. *Quae tamen haud admodum calida, neque sicca, aut resolutiva esse oportet, sed mediocri qualitate praedita, velim habeant attrahendi nutrimentum quod deficit ad partem ipsam gracilem.*

Baths not only cure atrophies, but they invigorate also, they cure sterility in men as well as women. *Porro venerem incitare traditur Tritolae, et Funcariae aqua ebibita, quae et viros impotentes juvare possint, eoque nomine sterilitatis causam amovere. Ad idem aqua Viterbij valet ebibita, Caldaneliae, aliaeque similes, quae renes mundando ac roborando vim quoque prolificam restituunt.* Nor are the waters of Bath inferior to any. Bristol waters have their strengthening qualities also.

12. *In Tumors.*

IN discussing and ripening *tumors*, Baths have *Tumors.*  
singular power. On this principle depends the  
vulgar practice of fomentations, poultices, cata-  
plafms, &c.

Oedematous swellings are cold and stubborn. They yield to hot drying Baths, of which Baccius gives a list, nor does he forget the *Bathonias in Anglia*. In internal pituitous abscesses, *Arnoldus de Villa-Nova* commends the internal use of aluminous waters, *quae nimirum acidulo sapore sunt*. For external tumors of this sort, he commends sulphureous waters as discutient. *Nam, et externos egregie diminuunt ac discutunt etiam sulphuratae*. Baccius recommends lutations, sweatings, and stillicidium on the part; he mentions arenations and insolations, with medicated baths also. *Quas item ex alto in locum affectum recipere confert, vel in sudationibus, vel in illutamentis: facit et insolatus, & arena in balneis Ischiæ, et in herbis medicatis decubitus*. In *Erysepila's* he thinks hot baths not so safe, far less in inflammatory tumors. He thinks it more prudent to endeavour to discuss such by potations of gentle dige-  
rent waters, with previous evacuation. In *Erysepilas*, he allows emollient fomentations of mallows, lettuce, night-shade, camomel. When the tumors come to break, conspersions of temperate warm water promote maturation, with Cera-tes, and other applications mentioned in diseases of the joints.

1,3. *In Ulcers.*

OMNIA ulcera sanare valent aquae medicatae prout adhibita, says Baccius, page 125. When  
H 3                                  ulcers

## BATHS ANTIENT and MODERN.

ulcers arrive at a malignant obstinate state, when they have baffled the surgeon's skill, patients commonly fly to sacred Baths, *ubi tentata undique remedia non profuerint, tanquam ad sacras balnearum appellationes recurritur.*

In chusing Baths, the condition of the part ulcerated is to be duly considered. The member also on which the ulcer takes its seat is also to be considered. Ulcers are often supplied with matter from distant parts by passages little suspected. Inconsiderate bathing sets the humors afloat, and fixes them on the vital parts. In some cases, random immersions may cure. There are ulcers which require the united skill of physician, anatomist, and surgeon. There are defluxions from the head, liver, or uterus, which find their passage through old ulcers. By such, women have had their monthly purgations. The curatory indications concern those parts from which the humors are derived. Purgation, pumping, and other aids are to precede the use of the Bath. The cause once removed, ulcers quickly yield to baths detergent, warm and drying.

In inveterate ulcers arising from intemperance, and bad habit, there is no method of cure surer than that of bathing. Cancerous and schirrous ulcers, as they rarely yield to medicine, little is to be expected from Baths. Ulcers hot, cold, moist, and dry are (according to Galen) to be cured by waters of opposite natures. Hot ulcers, *e. g.* are to be attacked by cooling, such as the *Grotta-Viterbii*. Cold flaccid ulcers are to be attempted by hot discussory baths, such as partake of sulphur, bitumen, iron and alum. Galen orders dry squalid ulcers to be bedewed with cold water. Serpigenous ulcers require a course of medicated waters internally. Externally,

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## BATHS ANTIENT and MODERN.

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nally, acrid corroding baths of iron, lead, &c. such as the *Ferinae*, of old in Germany, the *Virides* in *Dacia*, and the *Aeneae* in *Cyprus*. In obstinate sinous fistulous ulcers, Baccius administered the *Albulæ* externally and internally with success. *Nos Albulas multis ministravimus in potu, ac balneis, cum certo successu. Intertrigines coarum, et aliis locis, omnes modice exsiccantes sonant.*

### 14. In Wounds.

IN recent wounds Baths are preposterous. Old Wounds. wounds become inveterate ulcers, and are to be treated in the same manner. In wounded or punctured tendons, temperate baths prevent convulsions. Baths are very proper where splinters, rags, or bullets are left, as are Lutations also.

### 15. In Poisons.

PUNCTURIS autem venenosorum animalium aquæ Poisons. *marinae solium tepidum probatur*, says Baccius, page 126. *Ætius* mentions the use of stoves, hot-houses, and casks. *Pausanias* mentions a fountain in *Arcadia*, which, from its peculiar virtue in the bite of mad dogs, was called *Αλυσσον*. From *Asclepiades*, *Galen* certifies the wonderful use of the water contained in the trough of a blacksmith's forge. From this authority Baccius thinks iron to be possessed of a certain antilyssous property; because people bit by serpents were carried *ad Tungri aquas*, which are ranked among the *ferreous*, and because serpents throwen into these waters soon died. As antidotes to the juice of the *mandragora*, *cicuta*, *sardonia*, *opium*, *cantharides*, and other deleterious medicines, Baccius proposes artificial hot baths in his *Lib. vii. Cap.*

22. To those who have swallowed *leeches*, he advises warm bathing, keeping their mouths, mean-while, full of cold water, which being often changed, attracts the leech.

Baths cannot, as Baths, be said to possess an *antilyssous* quality; they act neither by altering, nor evacuating. Their primary ratio or *modus operandi*, can only be referred to that mutual influence of soul and body, that inconceivable effect which contrary affections produce. Music banishes mental and corporeal pains. Amusing stories, sudden news, surprizes, or affronts, cure the hiccup. One pain is the antidote of another. Burning and blistering are proofs of the doctrine. We are ignorant of the organs of sense and motion. Our guesses about the theory of *sensation*, and *muscular motion* are imperfect. In diseases and cures, there is a certain *Tædesion* which puzzled Hippocrates, a man who saw farther into morbid nature, than we with all our improvements. For us, blind mortals, sufficient it is to know, That persons bit by mad animals, nay even that *hydrophobics* have been cured by immersion. At the very sight of water, madness has vanished. *Sapientes communiter a celo venientes aquas contemplati sunt, ac balnea dixere sacra. Theologi consentierunt divinas in aquis prærogativas; & nos, in miraculis, multa relinquenda concludemus*, says Baccius, p. 127.

*In Various Disorders.*

*Various Disorders.* IN *Elephantiasis*, Aretæus commends hot sulphureous Baths, *De curat. morb. diuturn. lib. ii. cap. 13.* In *Melancholy* he commends hot baths, *ibidem. lib. i. cap. 5.*

Galen commends hot baths as the best evacuants.

Cælius

Caelius Aurelianus commends hot baths in *letbargic dispositions*, applying cold stupes, mean while, to the head, *Acutor. morbor. lib. ii. cap. 9.* For bringing down that superfluous flesh called *Πολυσαρκία*, he commends hot and cold baths, *Morbor. chronicor. lib. v. cap. 2.*—Alex. Trallianus recommends bathing in *Epilepsies*, and lays down the manner, *lib. i. cap. 16.* also in melancholy, *ibid. cap. 16.*—Avicenna commends cold bathing in *Colics. Canon. lib. iii. sen. xvi. tract. iv. cap. 10.*—Vitruvius (in his book *De Architectura*), has written fully on the virtues of waters.—Scribonius Largus commends iron waters, in disorders of the *bladder.* Vide *Le Clerc Histoire de la Médecine troisieme partie, liv. i. chap. 3.*—Seneca wrote professedly on waters: some cured disorders of the *eyes, nerves, ulcers, lungs, &c. Quaest. natural. lib. iii. cap. 1.*—For antient testimonies, see Chap. ii.

## C H A P. XII.

*Of Bathing, its Operation, Use, and Abuse.*

WE have taken a view of *Antient Baths* natural and artificial, we have described their parts or appurtehanes. In the present Gothic construction of our Baths, their temperature depends on external accidents. Some future Mecænas will (I hope) have pity on neglected Baths. Time may restore them to their pristine splendor. As such I proceed to account for their *modus operandi.*

The external use of water comprehends *batb- ing, half-batbing, partial batbing, sweating, pump- ing, illutation, saburratation, stillicidium, &c.*

Artificial Warm Baths are composed of pure *Weight of* sweet water, heated by fire. The weight or *water its* pressure of water hot or cold is nearly the same. *effects.* By this weight, or pressure, the body suffers no

inconsiderable change. From *Philosoph. Trans.* No. 181 and 305, we learn that the specific gravity of the air is to that of water as 1 to 800, or rather 885. When the body comes to be immersed in water, the weight or pressure of the water acts on the body in the same ratio as water exceeds the atmosphere in weight. This external force stops the flux of humors outwards, and drives them inwards. When this external force comes to be removed, the humors naturally flow to the skin; the fluids return to their wonted circulation. Cold water, to its weight, adds that also of its contractile power; thus it is that the external vessels act more forcibly on their contents; thus the pulse comes to beat quicker. Moderate heat, e. c. relaxes the cuticular vessels, and takes off the stimulus.

*Baths,  
their ef-  
fects on the  
nerves.*

Moderate Baths relax the cuticular vessels, soften the muscles, and wash away filth. Warm water insinuates itself into the interstices of the fibres; thus it softens, and increases their bulk. This accounts for the anodyne quality of warm water; for pains often proceed from distension of the nerves. If these nerves are superficial, they are subject to immediate contact; deeper seated, they are quieted by that wonderful consent which subsists between the nerves. In Bathing, the nervous papillæ which terminate in the skin, thus tickled, the whole *Genus nervosum* is put into an undulatory motion, the soul attends to this new sensation, and finds a sweet avocation from pain. By repeated cessations of this sort, the nerves affected gradually recover their tone, pain ceases, the patient finds a cure. Certain it is, that, in pains the most violent, persons find themselves in heaven while they are immersed in warm water. This we see verified every day in patients afflicted with *Colics*, *Nephritic pains*,  
Heat



## BATHS ANTIENT and MODERN.

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*Heat of urine, &c. &c. &c.* Baths hot and cold seem to have that immediate influence on the nervous system, which surpasses our shallow conceptions. On causes we may wrangle as we will. Let effects speak for themselves.—After six and thirty years Bath-practice, Dr. Baynard (treating of *Palsies* proceeding from *Colics*) reasons thus, “ Our Baths have cured solutions and “ contractions, which being contrary operations, is past my philosophy to find out, unless “ (as Van Helmont says) it be by comforting “ the *Archoeus*; for warm baths are friendly fermentatures, natural *Sal-Volatile's*, and cordials “ to the faint and languid spirits.”

For the purposes of softening or relaxing, the *Warm* purest, softest, simplest waters are the most proper; such as heat soonest, boil pulse, wash <sup>water</sup> linnen, draw tea, and mix with soap. Such waters divided into their most minute particles, <sup>mixes with</sup> <sup>the blood,</sup> <sup>and rarifies</sup> <sup>the air.</sup> easily enter the inhalant vessels; thus they mix with the blood. But this is not all. The most considerable change is brought about by heat, which rarifies the air contained in the mass of blood, and thus dilates the vascular system. This rarefaction of the juices raises the pulse. The blood circulates faster, the skin reddens, sweat ensues. Thus, while the vessels are compressed from without, and dilated from within, the intestine motion of the component part of the blood is increased. Viscid juices, useless excrementitious humors thus subdued, naturally fly *qua data porta*. When the weight of the water is removed, i. e. when the patient comes out of the Bath, nature naturally discharges herself first of her morbid particles by the secretory and excretory organs, despumation and health ensue. Galen was so fond of warm-bathing as an evacuant, he looks upon it as the principal, *Comment in Aphor.*

## BATHS ANTIENT and MODERN.

*Aphor. Hippocrat. lib. iv. Aphor. 2.* Asclepiades depended on cutaneous evacuations in most diseases. Chrysippus, Erasistratus, and their followers carried this doctrine too far; they rarely bled or purged.

Lewenhoeck presents us with an experiment which proves the power of water when it mixes with the blood. "In a *Bat* languishing with  
 "hunger and cold, then again cherished (by the  
 "help of his *Microscopes*) he viewed that thin  
 "membrane which this little animal spreads  
 "for wings. At first he could discover no motion  
 "either in the arteries or veins. As it began  
 "to revive, he saw an oblong globule of blood  
 "protruded, anon retropelled, then again pro-  
 "truded, so backward and forward, until at  
 "length, this little mass resolved by attrition  
 "passed through the streights of the artery into  
 "the corresponding vein."

That warm water relaxes the fibres we have already seen. Warm water not only relaxes but it insinuates itself into the blood vessels. Vessels relaxed yield to the obstructed mass, and as this mass passes forward and backward, the watery diluent passes over, is rubbed, and mixed with it, until the obstruction comes to be resolved.

Having premised the *modus operandi* of simple bathing, we now proceed to point out those cases in which it promises help, together with those cautions which are necessary in its administration.

*Previous  
evacuation  
necessary.*

From their weight and pressure we rationally infer that Baths are not to be prescribed to persons full of blood, or to those who labour under internal local inflammation, without previous blood-letting. From the same principle, warm Baths are not to be used till the body is purged of

## BATHS ANTIENT and MODERN.

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of those impurities which lurk in the first passages, nor after a full meal.

Warm Baths (by *rarifying* the juices, and quickening the circulation) resolve viscid juices, and open recent obstructions. Those, therefore, who labour under a bad habit of body, may reasonably expect relief from soft warm Baths. For the very same reason, let me forbid those who are lethargic, as well as those who labour under infarctions of the glands of the abdominal viscera.

Warm Baths (by their *pressure* and *heat*) promote perspiration and sweat. The juices of young people are balmy and balsamic. In adults, the blood gradually acquires an acrid scorbutic taint, which produces obstructions, and vellicates the fibres. These acrid particles are partly eliminated together with sweat, and partly diluted by mixture of water absorbed.

Warm Baths owe great virtues to their *relaxing* quality. Hence are they successfully administered in *scab, leprosy, elephantiasis*, and all other *cuticular disorders*. Nature affords no remedy more certain in external hardnesses of all sorts, parched skin, or muscles contracted. In the reduction of old luxations, their use is well known, Vide *Petit Maladies des os, Vol. i. p. 390. Edit. 1723.* On the same principle it is, that tepid baths facilitate the operation of other remedies, of *mercurials*, e. g. in the venereal disorder. As relaxants, they promote the catamenial, and hæmorrhoidal flux.

Warm Baths (by their *derivant quality*) possess virtues no-wise inconsiderable. Hence it is that Fred. Hoffman, from the authority of Aretæus and Trallianus, recommends them much in the mania and melancholy, *Hoffman Baln. aquae dulcis in affect. intern. §. 18, 19.* Nor does he scruple

ple to recommend them in epileptic affections, before the fit.

*After exercise.*

Warm Baths promise certain and sure relief to persons over-fatigued. They gratefully relax the nerves and fibres, they moisten parched fibres, they resolve blood apt to stagnate in the capillary vessels. This was Hercules's cure after labour.

*Cold Baths their use.*

In some cases, *Cold Baths* judiciously succeed warm. Among the antients, cold bathing was in high estimation, as we learn from Hippocrates, Strabo, Pliny, Oribasius, and many others. Antonius Musa cured Caesar by cold baths, which offended the *Baians* hugely, as Horace tells us,

nam mihi Baias  
Musa supervacuis Antonius, et tamen illis  
Me facit invisum gelida cum perluar unda  
Per medium frigus. Sane Myrteta relinqui  
Distaque cessantem nervis elidere morbum  
Sulphura contemni, vicus gemit invidus aegris.

Where diffused heat is to be collected, and thrown upon the inward parts; or, in relaxations of the solids, cold water is preferable to hot. Thus, in Palsies, cold baths happily succeed hot. In some disorders it may be adviseable to intermix the use of hot and cold baths. Thus the fibres increase their vibrating quality. Nor was this practice unknown to Antonius Musa, his brother Euphorbius, Caelius Aurelianus, and Alex. Trallianus, as we learn from Pliny in his Natural Hist. lib. xxv. cap. 7. lib. xxviii. cap. 1. §. 20. Floyer and Baynard have given us memorable proofs of the virtues of cold bathing. From their practice, Antonio Cocci has brought the practice into vogue in Italy.

So



## BATHS ANTIENT and MODERN.

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So much for the virtues of waters pure, simple, sweet, unimpregnated with principles volatile or fixed. To the virtues of the aqueous fluids we may, with justice, ascribe the principal power of Baths of all sorts. Natural Baths, nevertheless, owe particular virtues to their particular contents. While patients are immersed in warm water, its subtle volatile spirit not only enters the inhalent vessels of the skin, but the pulmonary vessels also are filled with those particles which rise up in form of steam. Finding immediate admittance to the blood and nerves, they search the innermost recesses of the body, and produce effects not to be ascribed to simple water. Warm water naturally relaxes paralytics, and adds to the disease, where it proceeds from relaxation only. In our Baths there is a certain volatile principle, which (like electrical aether) animates the whole man. Bath water contains *Iron*, which we know to be drying and astringent; *Earths*, which produce effects mentioned under the Chapter of *Saburration* or *Arenation*; *Vitriol*, whose properties are drying, cicatrizing and of-charotic; *Sulphur*, which dries, cicatrizes, discuffs, repels, cleanses, and heals; and *Salts*, which discuffs and cleanse. Under particular heads we shall have occasion to account for the virtues of the several principles, as well as that of the *One great Whole*.

*Baths to be estimated by their contents.*

If to the external properties of waters we add their internal also, what may not be expected? Mineral waters stimulate the fibres of the stomach and intestines; thus they find admittance into the innermost recesses of the body; thus they add to the contractile power of the heart and arteries; thus Bathing and Drinking united exert their joint forces in opening obstructions, and promoting secretions of every sort.

*Bathing and drinking.*

Having accounted for the operation of water simple and medicated, we now proceed to *Vapor-Baths*.

*Vapor-Baths.*

From statical experiments we learn, That perspiration is necessary towards health, that its interruption brings on asthma, fever, flux, &c. and that hot dry air increases perspiration. Gentle heat discharges excrementitious matter. Excessive heat dissolves the very texture of the blood, and makes it flow thro' every pore. In Boerhaave's Chemistry we find a memorable proof of the doctrine. "The fluids of a Dog and Cat were, in half an hour, more dissolved in a sugar-baker's stove, than those of a man by a malignant fever. The colligated matter was plentifully discharged by the dog's salival glands, and had the appearance of bloody ichor. The cat was as wet as if she had been drawn through the river."

From this destructive power of air excessively hot, we may learn the utility of moderate *Vapor-Baths*. Water divided into minute particles by heat, enters the inhalant vessels without pressure. In some cases it may be preferable to Bathing. When it was necessary to promote the sudatory discharge without increasing the heat, the Antients wrapped up the body in cloaths, and bathed it in its own vapor.

When the perspirable matter was diverted, or retained, when the blood abounded with acrid sanious particles, when the glands, vessels, or pores were clogged by fat, cold, leucophlegmatic viscidities, when watery humours preponderated, sweating in *hot rooms* was recommended. Their operation is thus described by Galen in his *Method. Medendi, Lib. x. Cap. 10. Potest autem prima Balnei pars, ubi ingredientes in aere versantur calido, materias*

*per*

## BATHS ANTIENT and MODERN.

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*per totum corpus tum calefacere, tum vero liquare, inæqualia æquare, cutem rarefacere, & multa quæ sub hac detinebantur rarefacere.*

THE general intent of anointing with Oil in the *hot rooms* was to relax. Anointing and friction were alternately used. Friction answers the same purpose as the weight of water in bathing. Thus the vessels were alternately compressed, and dilated, the humors were forcibly driven forward, and backward; hence increase of heat, flux of humors to the surface, dissolution of concretion, and discussion of viscosity. The manner in which this *Apothèrapia* was performed, is elegantly described by Galen, *De sanitate tuenda*, Lib. iii. Cap. 2.—Van Swieten (in his Commentary on Boerhaave's Aphorisms) observes, That he saw a parotid gland, after many unsuccessful applications, resolved by being rubbed with woollen cloths, twice a day, for an hour together, after having been exposed to the vapor of warm water and vinegar.—The same, he observes, was the success in strumous glands of the neck. I have particularly treated of *Friction* also, in that Chapter which has for its title *Exercise*.

When the momentum of the blood had been gradually quickened, the gross humors attenuated, the perspiratory matter discharged, the vessels unloaded, and the narrower passages cleared by means of the *Hot room*, the patient was properly prepared for a greater rarefaction, and agitation in the second, which was much hotter; for, no man can live any considerable time, in air heated to 90 degrees; but, a man accustomed to hot bathing, may continue, for hours, in water heated to 100, and above, as we daily see at Bath.

When people rashly rush into intense hot baths, they are in danger of fevers, pleurisies, apoplexies,

apoplexies, &c. To prevent such accidents, we bleed, purge, &c. Our method is more tedious, and perhaps less safe than that of the antients, of which we have been just speaking.

*Semicupia*  
*Fomenta-*  
*tion, Pedi-*  
*luvia,*  
*Stillicidia.*

The *Semicupium* acts much in the same manner with the Bath.—Fomentations relax the skin, and, by opening particular pores, relieve pains, or abate swellings, inflammations, &c.—The *Pediluvium* acts rather by rarefaction than revulsion.—The *Stillicidium* gives a stimulus to particular vessels. This stimulus enables them to contract oftener, and more forcibly on their contents, while that part of the water which comes to be absorbed, dissipates or fuses the humors. Thus are obstructions often removed. Van Swieten says he cured rebellious tumors of the knee by this method, *Comment. in Boerb. Aphor.* Vol. i. p. 191.

*Modus*  
*operandi*  
*of Baths.*

In that treasure of observation the *Edinburgh Medical Essays*, Doctor Stevenson has recorded an Experiment which puts the *modus operandi* of Warm Baths of all sorts out of question.

“ In a cool evening, October the second, before supper, I caused two lads, one aged fourteen, the other thirteen years, both ignorant of the purpose of the experiment, to put their legs in warm water, after examining the colour of their skins, and the size of the veins in their hands and faces; and while they continued in the *Pediluvium*, I counted their pulses exactly by a watch measuring seconds, and observed that at 8, immediately after immersion, to the gartering below the knee in milk-warm-water, the pulses beat in a minute, the first 66, and the second 84, as before immersion. At 15 minutes after 8, the water a little before being increased in heat, tho’ not to the  
“ degree



" degree of the warmth of blood, the second  
 " yawned, and began to breathe quicker. Their  
 " pulses then beat, the first 69, the second 88.  
 " About 25 minutes after 8, the water being  
 " made full blood-warm, the veins of their  
 " hands were greatly swelled, the second's face  
 " was flushed; their pulses beat, the first 75,  
 " and the second 94. At 35 minutes after 8,  
 " both had their faces and hands very much  
 " distended; the first said he was greatly dis-  
 " posed to musing, the second was sleepy, with  
 " his face so red, that I was afraid of hurting  
 " him by pursuing the experiment. Both their  
 " pulses, which at the beginning, were soft  
 " and small; became very full and hard; and  
 " beat, the first 80, the second 98 in a minute.  
 " Then I took their feet out of the water,  
 " making them sit still, and reckoned their  
 " pulses, which, at 40 minutes after 8, beat, the  
 " first 71, the second 90; and at 46 minutes  
 " after 8, these pulses became less and softer,  
 " the first beating 69, the second 88. A little  
 " after 9, the flush was off the second's face,  
 " their pulses became quite soft and smaller,  
 " the first 66, the second 85, almost as they set  
 " out."

This experiment not only explains the *Modus operandi* of hot-baths, and accounts for other doctrines little understood before, but also confutes vulgar errors productive of mischief in the practice of physick.

" I have conversed and corresponded (says  
 " Stevenson) with many who were reckoned no  
 " mean philosophers, I have asked them, what  
 " they expected from a warm *pediluvium*, and in  
 " what manner it operated, and always received  
 " the same answer, viz. That *fire* and *water* are  
 " the two principal and universal *relaxers*, that

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“ warm-bathing, by relaxing and enlarging the  
 “ capacities of the vessels, makes a derivation  
 “ of the fluids into the parts bathed, and a re-  
 “ vulsion from those at a distance, that this  
 “ revulsion from the brain or lungs, brings a  
 “ sudden relief to the parts oppressed, that  
 “ Bathing the limbs in the *Small-pox* increases the  
 “ eruption in the extremities, and so diminishes  
 “ that of the viscera, or upper parts.”

Were this specious philosophy confined to speculation only, it would signify little; but the misfortune is, that this doctrine of *Revulsion* is founded on practice by those even who have been long versant in practice.

*Pediluvia*  
 act by  
 rarefac-  
 tion.

That the Antients should be mistaken about the effects of the *Pediluvia*, we need not wonder. They were ignorant of the *Circulation*. Bellini enumerates the advantages of *Hot-bathing*, but dwells not on *Rarefaction* so much as the subject requires. Boerhaave has transmitted the doctrine of *Derivation* by the *Pediluvium*. So powerful is the force of prejudice, that the judicious Hoffman, though he speaks expressly of the *expansion of the blood*, and *swelling of the body* in his *Theory of Hot-Bathing*, yet he extols the virtues of the *Pediluvia* by such expressions as these — *fere divinæ sunt virtutis Pediluvia*; — *præstantem vim humores a pectore derivandi possident* — *ad recedendum sanguinis ad inferiora motum, egregiam spondent usum*, &c. His practice corresponds with his theory. He uses warm *pediluvia* in *Hæmorrhages*, in *Spasmodic Asthma's* with suspicion of a *polypus in the heart*, in *Vertigo's*, *Hæmoptoes*, and some other similar cases inconsistent with the doctrine of *Rarefaction*.

If the errors of antiquity have been blindly adopted by three such luminaries in science, is it to be wondered, that in an age of indolence, and inattention, error should continue?

“ Dr. Stevenfon mentions the Case of a Reve-Cases.

“ rend Divine in a fever with a head-ach, with-  
 “ out delirium, or other threatening symptom,  
 “ who had his legs put into hot water. At first  
 “ he found it very agreeable, then he spoke  
 “ much, in half an hour became delirious, and  
 “ so continued until he died.”—“ A wife and  
 “ sober matron, by putting her feet into warm  
 “ water, brought on a delirium just as if she had  
 “ drank Champagne.”—“ A young Nobleman  
 “ (by going into the warm-bath) sang and danc-  
 “ ed like one drunk, then raged like a mad-  
 “ man.” The two last recovered their senses  
 as soon as they cooled.

I have often used the warm pediluvium, and  
 observed the effects on myself correspond with  
 Dr. Stevenfon's experiment. In consultation  
 with the late Dr. Harrington, in a gouty case, he  
 proposed the warm pediluvium, which I object-  
 ed to, because the head was affected. I present-  
 ed him with Dr. Stevenfon's experiment as a  
*causa scientiæ*, which he owned he never had con-  
 sidered, and for which he thanked me. He  
 owned, at the same time, that, in his long prac-  
 tice, he had often seen the bad effects of the  
 warm pediluvium in cases where he little expect-  
 ed them, and never before could account for the  
*rationale*.

That fire is a relaxer we do not deny; but the *Rarefac-*  
 principal effect of hot water in the *Pediluvium, tion.*  
 cannot with any propriety be called a relaxation  
 of the vessels. We might just as well say, that  
 when heat is applied to a bladder half full of  
 air, and the bladder swells to its full dimensions,  
 that the heat relaxed the bladder, when indeed  
 it only expands the air. In a cold frosty day,  
 the veins appear no bigger than threads. After  
 sitting

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sitting some time by the fire, they swell considerably. This proceeds from no other cause than the rarefaction of the blood, which when warm, occupies a larger space, and distends the vessels. In the experiment of the *Pedilavium*, the legs acquire a warmth, the blood is rarified, which circulating imparts a greater degree of warmth to the rest of the mass, and as there is a portion of it passing constantly through the vessels of the legs, it acquires a new heat, which heat is communicated to the circulation. The rarefied mass occupies a larger space, and consequently circulates with greater force. The pulses of the wrists and temples beat fuller and quicker, as well as those derived from the descending *Aorta*, which destroys the doctrine of *Revulsion*.

Numberless are the *Cases* related by authors of undoubted credit of the effects of *Revulsion*. Patients have been cured by pediluvia; but these cures were performed by increasing the momentum of the blood. Where obstructions are not of long standing, where the impacted matter is not obstinate, Warm-bathing is the cure. In recent colds, in slight peripneumonies, danger may be averted by bathing the feet in warm water. This and fasting are my only remedies. The Bath-guides carry off their colds this way. But such cures are no more to be imputed to revulsion, than if one was to say that he had made a revulsion from the breast by the means of sack-whey, hot punch, or bottle of claret, which produce their effects by a similar operation, viz. increasing the Circulation, opening the pores, and that moving lentor which stagnated, or moved slowly in the vessels of the lungs.

*Fever necessary.*

In this sense *Fevers* may be considered as necessary instruments in the hand of nature for removing

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moving those obstructions which are the causes of chronical ailments. Distempers which have eluded the utmost stretches of art, have yielded to accidental fevers. Sydenham wished for a medicine that could as certainly create a fever as the *Bark* cured it. In *Palsies*, there are no hopes of cure when the Circulation comes to be languid. Among other methods which Boerhaave recommends for the cure of those diseases which arise from the *Glutinosum spontaneum*, he says, *Febris saepe medicamenti virtutem exercet ratione aliorum morborum. Quæ obtinebitur aucto motu, medicamentis diluentibus, solventibus, stimulantibus, calore, balneo.* In those diseases which arise from *Obstruction*, he says, *Sanatur vero remediis quæ motum augent per vasa & viscera, dilutione, attenuante fluido advecto, permisto, moto coagulante causa educta.* Injudicious, therefore, is the practice of those who counteract nature by quelling that fever from which alone health is to be expected, who, frightened by little fevers of their own creation, fly immediately to the lancet!

*Mal-practice.*

In Convulsions arising from inanition, alkaline spirits, compound waters, and warm cordials, give relief. On the same principle, weak hysteric people who, by having their vessels unequally filled, complain of *head-achs*, find relief by the Pediluvium. The vessels are suddenly filled with rarified fluids, the æquilibrium is restored between muscles convulsed and their antagonists. But Pediluvia, in such cases, are (like drams) rather fillups than cures.

At *Aix la Chapelle*, and all those places where Bathing is regulated by common sense, there are stores of cold water as well as hot. By the turning of cocks the natural warm waters are tempered by the mixture of cold. Baths are

prepared of simple soft water warmed to any degree.

*Virtues.*

Where the viscera are sound, where obstructions are resolvable, where the Physician understands the manner of operation, and where the patient does justice to himself, Baths are preferable to cordials, and sudorifics of all sorts. Their effects can be moderated, diminished, or increased at pleasure.—When patients rush from

*Dangers.*

external air into Baths very hot, heat shuts the pores, so that neither moisture can enter, nor perspirable matter escape, *Balneis, si aquæ justo calidiores fiant, vis quidem calida inest, sed non humida. Quippe horrere corpora, contrabique exiles eorum meatus, ita ut nec madescere ab extrinsecus, nec excrementi quicquam emittere,* says Galen, *De sanitate tuenda, Lib. iii. Cap. 4. Sane cogit clauditque tum frigida tum fervens aqua, Ibidem, Cap. 8.*

There are medical waters naturally so hot, that they cannot be used for hours. Such are the *Caroline springs*, such is the *New-bath at Aken*, such are those of the islands of *Jamaica* and *Montserrat*. Baths which abound with astringent minerals are still more hazardous. To the divine Old Man we are bound for one general advice, which has held, and will hold while common sense prevails; and this is a rule that happily corresponds with the heat of our Baths, viz. “When the natural heat of the body exceeds that of the Bath, it gives strength and vigor; when inferior, wasting and languor succeed.” Thus instructed, the wise antients were wont to prescribe previous exercise, not only with the view of eliminating peccant humors, but to bring the Circulation to the standard of the Bath.

The young, the plethoric, and the healthy may now and then wash their skins in the *Cross-bath*. Let such ponder well that admonition of Baccius,

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Baccius, p. 96, *Et non minus bi periculo vacant qui corpora ac humores alioqui sanos agitent, ut sæpe multifariam lædantur, et quos vidi aliquos immo ad interitum.* To such wrong-heads, this excellent author applies his country adage, *Andare al Bagno par le doglie.*

Where there is suspicion of *Schirrus*, or inveterate obstruction, Bathing hastens the catastrophe. Harmless indolent hardnesses may be converted into malignant Cancers.

The gross, the unwieldy, the corpulent, and the weak, have need of the best advice. Of *Improper Bathing*, every season furnishes examples.

“The Reverend Mr. Lyon, scorbutic, gross, *Cases.*  
“cachectic, and corpulent, hovered generally  
“two hours over the hottest springs, in the kitchen of the *King’s Bath*. This fixed an inflammation on the liver, and in consequence, a  
“jaundice, from which he narrowly escaped.”

“Miss M——m, a young Lady of a delicate  
“habit, laboured under a variety of ailments  
“which indicated Bathing. She was advised to  
“bathe, and that in the *King’s Bath*. After  
“every bathing, she was seized with a convulsive fit, which held her generally half an hour.  
“She was advised to go on, which she did eleven times, with the same consequences. To  
“remove these fits, she swallowed pills and potions, all to no purpose. A gentleman who  
“had a particular regard for her, entertained  
“me often with her complaints; he pressed her to have my advice. She had faith in  
“her apothecary, she was not bad enough for a  
“Doctor, his intreaties were vain; I frankly  
“told him that her untoward symptoms were  
“the necessary effects of *Improper Bathing*. I  
“desired her to use the *Cross Bath*, which she  
“pursued without one fit; she established a  
“better

BATHS ANTIENT and MODERN.

"better stock of health than ever she had enjoyed."

Dr. Baynard gives us an instance applicable to the present position. "A Lady was brought to Bath in *Extremis*, desponding, sighing, swooning, convulsions, atrophy, &c. By gentle steps, and gradual accessions, she recovered, so as to be able to dance in the Town-hall. He adds, there are few cases wherein moderate drinking and bathing may not compleat cures, if the patient has the good luck to light on a Director who can distinguish a kettle-drum from a cart-wheel."

In the present rude construction of our Baths, their temperature depends on accidents. Our weather is as variable as our tempers. Rains and high winds have a sensible effect on the Baths. The Queen's Bath is rather too cold for some patients; at other times abundantly warm.

One general rule admits of no exception, viz. There is far greater danger from Baths over-hot, than from those over-cold. The heat of the *Cross* and *Queen's Baths* is nearly the same with the native heat of the body in health. Sweats violently excited are violent remedies. The most moderate Baths create some fever. This fever subdues a part of the peccant humors. Repeated trials act safely, surely, and pleasantly. If sweats should not kindly supervene, sack-whey is preferable far to the lancet. Those symptoms which require bleeding and purging are, too often, the effects of *Improper Bathing*. Agreeable to the old distich, the wholesomest things may be converted into poisons.

*Balnea, Vina, Venus corrumpunt corpora nostra,  
Restituunt eadem, Balnea, Vina, Venus.*

C H A P.



## C H A P. XIII.

*Of the Origin of Springs.*

PHILOSOPHERS are divided about the origin *Authors*  
of springs; some deriving them from the *divided.*  
sea, and the central parts of the earth. This  
opinion contradicts the laws of mechanics, hy-  
drostatics, and reason.

Springs and rivers proceed from the region of  
the *Air*; for rain, snow, clouds, mists, dews and  
hoar-frosts actually afford supplies to them;  
whence they rise higher in wet weather, and sink  
in times of drought. Springs rise in vallies,  
owing to the transfudation of higher rivers, or by  
falls of rain which strain themselves through the  
crannies of the earth, till at length they meet  
with stiff bottoms of stone or clay which prevent  
their descending; so that, upon increasing, they  
can only rise upwards, and discharge themselves  
in the manner of running springs. Thus springs  
continue to overflow; thus they form brooks,  
which are increased by rains and snow, so as in  
time, to wear to themselves channels in the earth.  
In their way, they unite with other rivulets, in-  
crease their streams, and now wearing wider and  
deeper channels, make rivers which degorge that  
mass of water into the sea, which the sun had  
formerly exhaled in the form of vapor. This  
constant succession is the operation of bountiful  
nature. This appears to be the genuine origin  
of springs. Nor are those springs which are  
found on the tops of hills any objection to the  
general doctrine. This may be accounted for  
from the condensation, resolution, or distillation  
of the clouds in places so high and so cold.

As

As therefore springs take their rise from the highest mountains, and as mountains are composed of beds or strata of sandy, stony, calcareous, clayish, or marly earth, so the lower parts abound with beds of iron-ore, oker, pyrites, or sulphureous marcasites. Mountains abound also with sulphur, the ore of which, properly treated, yields the common brimstone. Vitriol is also owing to sulphureous marcasites. Lastly, That mineral *Gas*, or sulphureous vapor which pervades the bowels and crust of the earth, appears to be the thing that works the changes upon minerals and mines.

Springs, hot and cold, impregnate themselves with iron; as appears by their stipticity, okery sediment, and gall-tinging quality.

Springs, hot and cold, afford an alkaline salt, or rather earth. Hoffman confirms this of the German hot waters. So does Paschal of the *Bourbon-waters*; so does Gracchius of a cold water in *Sweden*.

Hot and cold springs both contain the subtile volatile æther, as we have already seen. The hot springs lose it sooner than the cold.

Thus we see that hot and cold springs have a great affinity in their origin, principles, and medicinal virtues.

## C H A P. XIV.

*Of the Cause of Heat.*

VARIOUS (in all ages) have been the opinions of philosophers concerning the cause of heat in waters. That this cause is adventitious, is universally agreed. *Various opinions.*

Zeno, Cleanthes, Thermophilus, and other antient philosophers recur to the universal æthereal heat, that of the *Sun* particularly.—But, the rays of the sun vary in their heat; mineral waters retain their heat equally. *Heat of the Sun.*

Others ascribe their heat to *motion*.—For the reason already adduced, this cannot be the cause. *Motion.* Besides, we find the most rapid rivers cold.

Democritus supposes mountains of *Lime* underground, which, touched by circumambient air, cause heat.—This doctrine is refuted by Aristotle, Agricola, Porta, &c. because experience shews that Lime cannot warm water before it undergoes the fire. But, let it be granted that Lime may be burned in the bowels of the earth; how can the same quantity serve for ages; can Lime once slacked produce more heat? *Unslacked Lime.*

Others have supposed *subterranean putrescencies*.—How can these be supposed to be sufficient or continual? Would not water, especially salt water, correct this putrescency? *Putrescencies.*

Others refer this heat to warm exhalations.—How comes it then that all waters are not hot? How should waters be as hot in winter as in summer? *Exhalations.*

Kircher, Burnet, &c. have framed curious speculations of *Central fire*.—In digging through mountains, no such fires have been found. *Central fire.*

Others

*Subterranean fire.*

Others fly to subterranean fires actually burning.—How comes it to pass that fire and water agree so well? How come waters to be heated, where volcano's never were supposed to exist? How comes it that these fires subsist for ever?

*Mixture of Iron, Sulphure, and Water.*

Some suppose subterranean heat to be produced by the conjunction of *Iron* and *Sulphur* moistened with water.—But, nature produces the ore only. Iron cannot be produced without Stahl's *φλογισον*, or *Inflammable Principle*, the *Causa Metalleitatis, Malleabilitatis, ductilitatis, et splendoris metallici*, to which wood-coals are commonly used. If, without this, the *Ore* is put into a smelting furnace, it vitrifies. The common experiment of filings of Iron and Brimstone proves nothing in this case; for no man will pretend to say that the bowels of the earth contain manufactured Iron; nay the very term *Chalybeate-waters* is a vulgar error. How can subterraneous fires be thus occasioned, when nature is destitute of the principal ingredient? When Brimstone meets with *Iron-Earth* they unite without effervescence. This is the reason why we never meet with pure Sulphur near Iron Ore, as we do near Copper. In the common experiment, exactness in quantity, purity, mixture, &c. is required. Can this exactness be supposed to exist in the bowels of the earth? Supposing that mineral Waters owe their heat to subterraneous fires, it inevitably follows that the heat must be liable to changes. Burning mountains frequently alter their condition; sometimes they burn out; the contiguous mineral waters retain their heat. On this supposition, hot mineral waters must only exist in the neighbourhood of burning mountains. Have we any such? Fire cannot subsist without *air*; when the air is once excluded, the fire ceases to burn. The combusti-



## BATHS ANTIENT and MODERN.

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ble matter of Volcano's is *Pit-coal* accidentally set on fire.----In the county of *Fife* there is a Coal-pit, the property of Lieut. Gen. St. Clair, which has continued burning for hundreds of years. There are springs all round, and as cold as any on the *Alps*.----To find out the cause of heat in certain waters, *Rochas* caused the earth to be dug to a considerable depth. After fifteen days digging, the labourers found the water almost boiling. Pursuing their labour still deeper, for three days, the water was found to be quite cold. *Vide Traët. de Aq. mineral. Cap. 1.*---Subterraneous fires, as they relate to our subject, must be supposed continually to be confined within the centre of the earth.

Some have supposed *Nitre* to be the cause of *Nitre.* heat. *Nitre* partakes of the *Inflammable Principle*. *Nitre* never yet existed in mineral waters. Add nitre to warm water, it cools it. Add nitre to the mixture of iron and brimstone, it baffles the intention.

Others have supposed this heat produced by *Repug.* repugnance of spirits contained in waters.---*nance of* How come waters to be supplied with constant *Spirits.* regular recruits of spirits?

Blondel supposes Thermal waters to be im-*Efferves-* pregnated with mineral particles. He supposes *cence.* all mineral salts to contain either an *acid*, or an *alkali*. When these salts or spirits meet, they swell, effervesce and raise heat. *Summam exurgere contentionem, pugnam, turgescere efferverescere, aliquando ad ignitionem usque.*

To evade all absurdities, Paracelsus pro-*Innate.* nounces waters to be heated from the beginning. Fabricius subscribes to this opinion, with this addition, that this heat is regulated by the ministry of the *Stars*. *Aquas quoque salutare, ac medica facultate pollentes e terra proficere jussit summus opifex,*  
*quas*

*quas ministerio stellarum, proinde ac reliqua omnia moderatur ut institutam semel legem, cursumque perpetuo observent.*----How come some of these hot mineral waters to cool?

*Fermentation.*

Dr. Jorden wrote a valuable discourse of *Natural Baths and Mineral Waters* in the reign of Charles I. By his term *Fermentation*, he means no more nor less than motion or mixture of fossils creative of heat in mineral waters. *Chap. XIV. page 104*, his words are these. "In the former chapter I have set down mine opinion concerning the generation of minerals, that they have their seminaries in the earth replenished with spirits and faculties, which meeting with convenient matter, and adjuvant causes, do proceed to the generation of several species, according to the nature and efficient aptness of the matter. In this work of generation, as there is *generatio unius*, so there is *corruptio alterius*. This cannot be done without a superior power, which (by moisture, dilating itself) worketh upon the matter like a ferment. This motion between the agent *spirit*, and the patient *matter* produces actual *heat*, *De motu fit calor*. This is a natural, not a destructive heat, as I have shewn in *malt*, and in every species of corn sown. Vegetable generation is brought to perfection in months, mineral generation requires many years. This generation continues for ages, it subdues new matter, as we see in the Iron mines of *Ilkva*, the Tin mines of *Cornwall*, the Lead mines of *Mendip*, the *Peak*, &c. which not only stretch farther, but also are renewed in *groves* which have formerly been wrought. This accounts for the *perpetuity* of *Springs*, as well as for their equal tenor of heat.

" This

“ This heat is not, in its nature, destructive,  
 “ but generative, joined with moisture. It re-  
 “ quires no air for eventilation; it is hot enough  
 “ for the hottest Baths, if it be not too re-  
 “ mote from the place where the water issu-  
 “ eth forth. As the minerals are in *solutis*  
 “ *principiis*, their qualities are also imparted to  
 “ the waters.

“ Did actual heat meet with mineral bodies  
 “ whilst they are in the act of generation, it  
 “ would dissipate the spirit, and destroy the mi-  
 “ neral. We never find metals or minerals melted  
 “ in the earth, nor do we find metals sublim-  
 “ ed, both which must happen did actual fire  
 “ subsist. This natural heat is acknowledged  
 “ by Agricola. Actual fire was never yet found  
 “ by miners.”

Without art, equivocation, or philosophical  
 deduction, Dr. William Turner (speaking of our  
 very waters of Bath) says, “ The chief matter  
 “ whereof these Baths have their chief virtue and  
 “ strength, after my judgement, is *Brimstone*.”

In his Treatise on *Chalybeate Waters*, and *Natu-  
 ral Hot Baths*, page 50, Dr. Linden seems to as-  
 sent to, and account for this opinion. “ We all  
 “ know that *Brimstone* or *Sulphur* consists of no-  
 “ thing else but *Phlogiston* and *Acid Salt*, or *Acid*  
 “ *of Vitriol*. Wherever the *Phlogiston* meets  
 “ with the strongest *acid of vitriol*, it impreg-  
 “ nates the latter so strongly, that it becomes  
 “ a substantial *Brimstone*. If it happens that a  
 “ constant current of water passes over this mix-  
 “ ture before it is complete, then this water be-  
 “ comes hot, as it will always do when mixed  
 “ with Oil or Acid of Vitriol, and much more  
 “ vehemently hot when this acid has strongly  
 “ imbibed the *Phlogiston*. This acid is con-  
 “ stantly supplied from its own *matrix*, and from  
 “ the *acidum vagum* which constantly circulates

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“ through

## BATHS ANTIENT and MODERN.

" through the globe. The Phlogiston is con-  
 " stantly supplied with mineral fumes and va-  
 " pors. When waters are compleatly saturated  
 " and heated, they burst forth as we see. The  
 " motives that lead me to this opinion are, 1.  
 " Brimstone may be produced from these wa-  
 " ters, which, by adding a very small quantity  
 " of phlogiston, may be made complete. 2.  
 " Soft brimstone, where the phlogiston is partly  
 " destroyed, by adding thereto cold water, will  
 " create a hot one, which partakes very much of  
 " the same nature with the natural hot waters,  
 " which the filings of iron and brimstone never  
 " can do. The differences of heat in waters is  
 " owing to the difference of the quantity of  
 " phlogiston contained. Those which consti-  
 " tute a complete brimstone are the hottest,  
 " such are those of *Aix la Chapelle*, *Charles Bath*,  
 " *Wishaden*, and many others in Germany. The  
 " steam of these is so strong, that it stains metals  
 " as the smoke of brimstone does. The fumes  
 " of those at *Aix* constitute *Flores Sulphuris*.  
 " The waters of *Bath*, *Xerxes* in Portugal, and  
 " *Toplizer* in Bohemia, are impregnated by an  
 " acid that possesses more phlogiston than is ne-  
 " cessary to constitute a brimstone. These give  
 " a yellow colour to metals, a proof of the plen-  
 " ty of phlogiston."

Almighty  
 Fiat.

To conclude, we know from experience that  
 hot medical springs are generally found where  
 the strata of the earth lay horizontally. In these  
 horizontal beds, or nests, there are mineral mix-  
 tures which may be put into perpetual ferment  
 by means of the universal acid. This bids fair-  
 est (I think) to account for that regular uniform  
 heat which subsists in waters for ages. If this is  
 not satisfactory, we must have recourse to the  
 Almighty Fiat.

P A R T



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P A R T II.

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OF THE  
NATURAL HISTORY,  
ANALYSIS, and GENERAL VIRTUES,  
OF  
Bath and Bristol Waters.

C H A P. I.

*Of the Natural History of Bath Water.*

**I**N the days of the Antient Britons, Bath was *Names*, dignified with the name of *Caer Bren*, from *Caer* a city, and *Bren* a king, the King's City. They gave it also the name of *Caer-Palladur*, Pallas's City, and *Caer-Baden*, the city of Bath.

The Romans called the place *Aquae Solis*, *Aquæ Callidae*, *Thermae*, and *Balnea*.

The Saxons called it *Bathancester*, the City of Baths, *Hat-Bathan*, Hot Bath, and *Ackmanchester*,  
K 2 the

HISTORY, ANALYSIS, and VIRTUES, the city of Oak-men, or Invalids. Thus, in its antient, middle, and modern state, the city appears to have borne the appellation of *Bath*.

*Antient  
Baths.*

In that chapter which treats *Of the Antiquity of Baths*, I have clearly evinced the existence of Roman Baths. On account of the hot springs most probable it is that the Romans sat down at Bath. Bath was the residence of a consular army for ten or eleven years. The very roads which lead to it (as we have seen) were sacred.

*Their de-  
struction.*

How these Baths came to be destroyed we are now to inquire.

Of the particular destruction of the Baths history seems to be silent. In general revolts, doubtless, the Britons exerted their resentment on every thing that was Roman. Public buildings even escaped not their fury. Tacitus supports the conjecture; let us hearken to his testimony.—“The Britons themselves are a people  
“who cheerfully comply with the levies of  
“men, with the imposition of taxes, and with  
“all the duties enjoined by government, pro-  
“vided they receive no illegal treatment and  
“insult from their governors; these they bear  
“with impatience. Nor have the Romans any  
“further subdued them than only to obey just  
“laws, but never to submit to be slaves.—The  
“first Governor of consular quality was Aulus  
“Plautius, then Ostorius Scapula, both signal  
“in war. Afterwards followed Didius Gallus.  
“Next to Didius came Veranius, who died  
“within the year. Then immediately succeed-  
“ed Seutonius Paulinus, who subdued fresh na-  
“tions, and established garrisons. Trusting to  
“these, he assailed the Isle of Anglesey, as a place  
“which supplied the revolters with succours.

*Britons;  
their an-  
tient cha-  
racter.*

*Britons  
revolt.*

“The Britons, when, through the absence of  
“the Governor, they were eased of their fear,

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“ began to commune together concerning the  
 “ miseries of bondage, to recount their several  
 “ grievances, and so to construe their injuries as  
 “ effectually to inflame their resentments. When  
 “ they had animated one another, they unani-  
 “ mously took arms under Boadicea, a woman  
 “ of royal descent. In her person she had  
 “ undergone the ignominy of stripes; her  
 “ daughters had been ravished. Under her  
 “ banner they forthwith assailed the soldiers  
 “ here and there dispersed in forts, and, having  
 “ stormed the several garrisons, fell upon the  
 “ colony itself, as the seat and center of public  
 “ servitude. Nor was any kind of cruelty  
 “ omitted with which rage and victory could  
 “ inspire the hearts of barbarians. They  
 “ sacked the temple dedicated to the deified  
 “ Claudius; they spared neither things animate  
 “ nor inanimate.

“ In truth, had not Paulinus come with nota-<sup>Britons</sup>  
 “ ble speed, Britain had been lost. Yet, by the <sup>reduced,</sup>  
 “ success of a single battle, he reduced the  
 “ country to its old subjection. He, though  
 “ otherwise a signal Commander, yet treated  
 “ such as had surrendered in a manner very im-  
 “ perious; insomuch that, in his room, Petro-  
 “ nius Turpilianus was sent as one whose beha-  
 “ viour would prove more relenting. Turpi-  
 “ lianus, when he had appeased the late com-  
 “ motions, delivered the province to Trebellius  
 “ Maximus. He, unwarlike and inactive, main-  
 “ tained the tranquility of the province by a  
 “ method of softness and complaisance. The  
 “ soldiers inured to expeditions, and feats of  
 “ war, through idleness, grew turbulent and  
 “ licentious. Neither did Vettius Bolanus, as  
 “ the civil war yet subsisted, exert any disci-  
 “ pline.

K 3

“ But

“ But when Vespasian had, with the posses-  
 “ on of the world, also recovered Britain, in it  
 “ were soon great commanders, noble armies,  
 “ and the hopes of the Britons quite abated.  
 “ There followed many encounters, such as,  
 “ sometimes, proved very bloody.

*Agricola's*  
*gentle*  
*sway.*  
*Its effects.*

“ Such was the condition in which Agricola  
 “ found Britain. As he had formerly been ac-  
 “ quainted with the temper of the people, as he  
 “ had also learned, from the conduct of others,  
 “ that little is gained by arms where grievances  
 “ and oppressions follow, he determined to cut  
 “ off the causes of war. He abolished all  
 “ exactions which had been devised for the lu-  
 “ cre of particulars, and which therefore were  
 “ borne with more regret than the tribute itself.  
 “ By suppressing grievances, he soon gained great  
 “ reputation. On the coming of the summer,  
 “ he assembled his army. To the enemy he  
 “ allowed not a moment's quiet or recess. Hav-  
 “ ing sufficiently alarmed and terrified them,  
 “ his next course was to spare them. By this  
 “ conduct several communities gave hostages,  
 “ and were begirt with garrisons and fortresses.  
 “ To reconcile them to inactivity and repose, he  
 “ first privately exhorted them, then publicly  
 “ assisted them to build temples, houses, and  
 “ places of assembling. Upon such as were  
 “ willing and assiduous he heaped commenda-  
 “ tions, and reproofs upon the lifeless and slow;  
 “ so that a competition for distinction and ho-  
 “ nour had all the force of necessity. He was  
 “ already taking care to have the sons of their  
 “ Chiefs taught the liberal sciences, already pre-  
 “ ferring the natural capacity of the Britons to  
 “ the studied acquirements of the Gauls; and  
 “ such was his success, that they who had so  
 “ lately scorned to learn the Roman language

“ became



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“ became fond of the Roman eloquence. Thence  
“ they began to honour our apparel, the use of the  
“ Roman gown became frequent among them.  
“ By degrees they proceeded to the incitements  
“ and charms of vice and dissoluteness, to mag-  
“ nificent galleries, sumptuous *Bagnio's*, and all  
“ the stimulations of elegance and banquet-  
“ ing.”

Hence may we conjecture, That possibly the Baths escaped the fury of the Britons in their insurrection under Boadicea, or that they were repaired under the artful government of Agricola. Certain it is, that the Romans abandoned their conquest about the year of our Lord 420, probably they left the Baths standing.

The Saxons carried fire and sword to the heads of the fountains; they laid the city in *Saxon con-*  
*quests.*  
ashes.

By their ruins, it is apparent that the Baths fell by the hand of violence, and not that of time; for the floors, walls, and pedestals are not only now entire, but stronger far than any modern building.

Long lay they neglected as a sink doomed to receive carrion, ordure, and rubbish of every sort, as appears by stone coffins, human skeletons, and bones of various animals dug out of their ruins. Their walls were incrusted with a variety of water-snail shells, also with a hard white petrification, a proof of the waters having been confined by the choaking of the sewer. By repeated devastations the face of the city came, in time, to be altered, the ground was raised to such a height, that when, lately, the foundation of the Priory was dug up, there actually was a considerable depth of earth between that and the tops of the Roman ruins.

K 4

What

What the Roman Baths were in their antient splendor, and what they now are in their Gothic barbarity has been shewn in that chapter which treats of *The Antiquity of Baths*. For a particular history of Roman Antiquities, and legendary tales, I beg leave to refer my reader to *Mr. Wood's History of Bath*. Prince Bladud and his pigs may, for me, rest in peace. My subject leads me to memoirs more authentic.

*Restoration of Baths.*

St. David, by consecrating the waters to Christ, cured them of Paganism. Certain it is, that he cleared away the rubbish about the principal springs, and, in the middle, erected towers with crosses, as marks of their conversion. The chief spring was (as we may see) inclosed in a spacious cistern, of 60 feet by 40. Four slips, at the corners, like so many bastions, served for Dressing-rooms. Thirty-eight niches served as receptacles for the bathers when it rained. These, at first, were situated in an open area, approachable by spacious avenues.—By devastations, encroachments, and abuses, we may truly say of our Baths, as Pliny of old said of those of *Claudiopolis*: The ædifice seems rather sunk into the earth than raised above the ground.

*Abuses, and their effects.*

In the reign of Queen Elizabeth, the proprietors of those houses which were most contiguous to the Baths, built slips for the convenience of their own lodgers. Without regard to propriety or impropriety, housekeepers recommended their own Baths.

Abuses multiplied so fast, that the benefactors of the city resolved to petition James I. for a power to reform. The Corporation joined in the petition which was lodged; but, the King's death unfortunately intervening, the design was dropped. Old abuses continued, and new ones increased; insomuch, that we find Dr. Jorden

in

(in his Discourse of Natural Baths) complaining to the Chancellor of the Exchequer, "That the waters could not do that good which Providence designed, for want of that police which foreign Baths enjoyed, many being driven, on these accounts, to the foreign baths of *Bourbon*, then much cherished by public munificence." He adds, *Most of the foreign Baths are covered.*

In the year 1572, we find Dr. Jones (in his *Baths Ayde*) complaining that our Baths are open while foreign *Baths* are covered; that the *Slips* are neither close nor warm.

Dr. Venner exposes those abuses which prevailed in his time, under the title of Bath's *Technology*.

In the year 1542, Leland assures us, that the *Springs* spring which then rose in the *Cross-bath* was *decay*. bigger than that of the *Hot-bath*. But, by the fatal effects of *private property* creeping so near the fountains, the spring in the former is now become, by much, the least of the two, notwithstanding the spring in the *Hot-bath* has long been in a declining state, by exhausting itself in the weak ground about the cistern, instead of rising up with that strength with which it first broke out in the year 1659. This accident stands recorded in the *Philosophical Transactions*, No. 49, p. 978; and in a little more than thirty years after, when Dr. Guidot, as well as Mr. Gilmore, gauged the water in the *Hot-bath*, at the fifty-fourth part more than the water in the *Cross-bath*, the guides found (by repeated observations) that each cistern filled in one and the same time. Hence may we infer, that whatever waste of water happened in the *Hot-bath*, between the year 1542 and the year 1693, a greater happened in the *Cross-bath*, which was then

then become the least visible spring of the two. It is most apparently so now ; if it decreases for the time to come in the same proportion as it has for these 55 years back, it must soon be entirely lost ; the present decrease of each natural day amounts to 33 tons of the 110 produced by the spring about the year 1693. In the year 1747, when the new drinking-pump was erected, the Bath took sixteen hours and a half to fill, as one of the guides assured Mr. Wood.—At this present writing, I was informed by one of the guides, that the *Hot-bath* takes twelve hours and upwards to fill, while the *Cross-bath* takes fourteen.

*Improvements.*

About the latter end of September, 1663, the King brought his consort Queen Catharine to *Bath*, under the direction of Sir Alexander Fraser, Physician, who had before attended her to the waters of *Bourbon*. Finding that our waters proceeded from the same minerals, he began to advise the internal use of them in the same diseases. From this æra the inhabitants began to turn their heads from the *Loom* to that of entertaining strangers.

Sir Alexander returned in the year 1673, when he introduced the method of drawing the water pure from the fountain by *Pumps*, as is the practice of this day. The City came to rise in esteem ; people began to make their houses more commodious ; Bath came to be famous for its buildings and company. This induced Mr. Gilmore to publish a map of the city.

*Antient amusements.*

The public amusements were *Bowling*, *Walking*, *Cock-fighting*, *Lives*, and *Balls* held at the Council-house. People seldom came in the winter ; for the roads were almost impassible. The Pump by the side of the *Queen's Bath* supplied drinkers of all degrees, and in all weathers, with the



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the water of the chief spring. The Duchesses of Cleveland and Portsmouth came down to Bath. Their heads were dressed. Music, with other pieces of gallantry, were then the fashion.

In the years 1702 and 1703, Queen Anne, and her consort Prince George, came down. This brought a concourse of people, so that the drinking pumps could not supply them. The neighbouring villages were crowded.

Sensible of this, the Guardians of the fountains built a handsome *Pump-room* where the present stands, and set up a new pump in it.

Application was made to Parliament for a *Roads* power to amend the principal *Roads*, and ave-<sup>mended,</sup> nues leading to the city; to pave, cleanse, and <sup>streets</sup> light the streets, lanes, &c. and to licence a cer-<sup>lighted,</sup> tain number of *Chairmen*. &c.

In this act the strictest regard was had for the free use of the waters. Invalids were exempted from all manner of *Toll*, as often as they should go abroad for air or exercise.

In the year 1708 Harrison built a handsome *Rooms* Assembly-house. To this he added Gardens and Walks, which the Corporation opposed with all their might, as prejudicial to their gravel walks. The citizens, in general, were uneasy at the sight of every new house, for fear that their old crazy tenements should be diminished in value. In despair, the general outcry then was, and still continues to be, *Bath* is overbuilt! *Bath* is undone!

“ When Dr. Jorden wrote his *Discourse on* <sup>Rude con-</sup>  
“ *Natural Baths*, the streets and public ways of <sup>dition of</sup>  
“ Bath were dunghills, slaughter-houses, and <sup>Bath.</sup>  
“ pig-styes. Soil of all sorts, and carrion, were,  
“ cast into the streets; in these the pigs wallow-  
“ ed. Butchers dressed their meat at their doors.  
“ The Baths were Bear-gardens. Both sexes  
“ bathed

## HISTORY, ANALYSIS, and VIRTUES,

“bathed promiscuously, by night, and by day, Dogs, cats, and pigs, were hurled in over the rails among the bathers.”—No later than the year 1727, Mr. Wood says, “The boards of the dining-rooms were of a brown colour, with foot and small beer, to hide the dirt, as well as their own imperfections; and if the walls of any of the rooms were covered with wainscot, it was with such as was mean, and never painted. The chimney-pieces, hearths, and slabs, were of free-stone, these were cleaned with a particular whitewash, which, by paying tribute to every thing that touched it, soon rendered the brown floors like the starry firmament. The doors were slight and thin, the best locks had only iron coverings varnished. The principal rooms were furnished with chairs bottomed with cane, or rush; nor were the tables or chests of drawers better in their kind. The looking-glasses were small, mean, and few. The chimney furniture consisted of a slight iron fender, tongs, poker, and shovel, all of three or four shillings value. With *Kidderminster* stuff, or, at best, with *Cheyne*, the woollen furniture of the principal rooms were made. Such as was of linnen, consisted either of corded *Dimaty*, or coarse *Fustian*, the city-matrons and their daughters flowered the latter with worsted during the intervals between the seasons, to give the beds a gaudy look.”

HITHERTO the improvements of Bath were but faint, accidental, or partial.

Wood's  
improvements.

Mr. Wood now began to turn his thoughts towards the improvement of the city by building. He formed one grand design for the ground at the north-west corner of the city, and another for the land on the north-east side of the town and

and river. In each he proposed to make a grand place of *Assembly*, a *Royal Forum*; another place no less magnificent for the exhibition of *Sports*, a *Grand Circus*; and a third place of equal state for *Exercise*, an *Imperial Gymnasium*, from a work of the same kind once subsisting at Bath, during the Roman conquest. He entered into *Articles* with Mr. Gay for land, on which he proposed to build a street of 1025 feet in length from south to north, by 50 feet in breadth from east to west, for an avenue to the grand design. The houses intended to be built on the west side of this *Berton-street*, were to contain a principal and a half story between the *Plinth* and the *Crowning*. Those on the east side were to contain two full stories. The houses on the west side were to bear the name of first-rate houses; those on the east were to be second rate.

He signed articles for making a *Canal* the whole breadth of the river, which was to reach upwards as far as *Tiverton*, the place where the first *Lock* is fixed. The banks were to have been formed and sloped, and walks were to have been laid out on their sides for the company. He procured labourers who had been employed on the Chelsea water-works. Until this time the real use of the spade was unknown in this part; the removal of the earth was reduced to a third part of what it formerly cost. He likewise provided masons, carpenters, joiners, and plaisterers: these he sent down to Bath. Now first it was that the *Lever*, the *Pulley*, and the *Windlafs* were introduced here. Before this, the masons hoisted up their heavy stones by ropes against the sides of ladders.

Discouragements made him drop his agency under Gay, and make an absolute contract with him for ground sufficient to compleat the fourth part of an open area called *Queen's Square*. *Berton-*

*street* was removed 150 feet more to the westward, and a new way, under the name of *John-street*, was substituted in its stead. The houses between this street and the Square were so designed as to increase, in magnificence, to fifth rates, by an addition of visible garrets. On the tenth of December 1728, the ground was broken for a foundation for some of the houses in the square.

*Grove.*

While the Square was building, the *Terrafs* before *Wiltshire's* room was levelled. This gave such an advantage to the houses on that walk, that the Corporation began forthwith to plant, and level the grove. Wood's journeymer-builders began to exercise their faculties. By the year 1736, no less than four new streets were built.

*Parades.*

In May 1738, Mr. Wood became absolute contractor for the ground of the Abbey-Orchard. The first stone of the first house fronting the *Grand Parade* was laid on the tenth of March 1739-40.

By a walk of 538 feet that was to reach from the Square to this parade, his design was to have laid the buildings of the Square and the Parade open to the view of each other. The *Grand-parade* was designed to measure 525 feet in length, and 52 and a half in breadth, in the clear.

The building which fronts this parade was to have been of a ten-fold figure, four of which he designed for the middle part, two for each end pile, and one for each interval between the body and the wings.

By this division, the middle part which was designed to have the aspect of a palace, became 210 feet in front. Each structure intended to have represented a wing became 105 feet in front; and each interval between the body and the wings came to be 52 feet and a half in breadth.

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These three piles were to have been of the *Corinthian* order, the middle was to have been adorned with columns and pilasters; the wings plain.

He articulated with the tenants who covenanted to build according to his design; who proceeded so far with the middle pile as to erect the cellar story conformable. Then a scheme broke out to *Narrow views.* lay aside the ornaments, to alter the proportion of the parade, and to erect the *Terrass-wall* with rubble-stone, so as to have no reference to the building. This narrow scheme was (in violation of compact) pursued and executed to the ruin of a design approved by every man of taste. Executed as it is, it still claims the name of the *Grand Parade*, it is the place of public resort. The variety of landskips which present themselves before it, reflects a something, that captivates the eyes of every beholder.

The *Royal-Forum* (according to the present *Royal Forum.* contract) is a spacious area 620 feet in length from north to south, by 310 in breadth. This is for ever to lie open and void. The building on the north is already erected, and, though it falls far short of the original design, it is, nevertheless, a magnificent pile of 210 feet, consisting of nine fifth-rate houses, forming one uniform structure, crowned with a *Balustrade*.

This *South-parade* is to be what the Grand-parade was intended. A building composed of a triple house, is to screen it from the westerly winds. Two of the houses are already erected. When the third is, and when the parade comes to be widened according to the plan, the city may boast of a summer and winter walk no where to be paralleled.

FROM Alfred's time, the city contained no *Extent.* more than what now makes the parishes of *St. Peter*

ter and Paul, that of *St. James's*, and *St. Michael's*. Within the limits of the two first, the whole site of the *Priory* was included as a ward of itself, like *St. Martin le Grand*, in London. By Queen Elizabeth's charter, the privileges of the city were artfully extended over the limits of the dissolved *Priory*, and over *Berton-Farm*.—Captain Henry Chapman, Alderman and Captain of the Trained Bands (describing the city in the year 1673) declares that it was not without suburbs, the fourth part being supposed to be so; and, all together, was not supposed to cover above 50 acres; the whole of the three parishes paying not above thirty pounds *Poor's-rate*.

*Spiritual  
govern-  
ment.*

As to Spiritual Government, the grand division of the city was formerly into two parts, these (according to Lambard the *Antiquarian*) were reduced to the three specified. *Widcomb* parish was antiently a Chapel belonging to *Stall Parish* in the heart of the City. *Widcomb* united to *Lyncomb* and *Haulway*, the whole was joined to the cure of Bath, so that the Spiritual government extends a complete parish beyond the temporal.

Such is the state of Bath considered as a city governed by the same laws. If we consider it in respect to its buildings, its divisions are into three parishes, and two hamlets.

*Buildings.*

Of the 27 streets, there are no less than 13 new, the produce of the last 22 years. Within the same period, we may place the rise of two inferior courts, five of the open areas of the superior, two terras-walks, one lane, and one alley, one hospital, one assembly-room, two poor-houses, and a free-school.

*Present  
state.*

This short period has produced surprising alterations. The City-Gates are pulled down. Elegant buildings extend themselves on every quarter.

quarter. Proud squares, parades, circus, buildings, and streets daily arise. Houses are sold far above their cost before they are roofed in. Masons and carpenters, who formerly mortgaged story by story, are now men of property. "In the year 1749, Wood computes the private houses at 1362, of which many are inhabited by people of fortune, the bulk by people who keep lodgings so convenient, that common fame makes the city capable of entertaining 12,000 people at once."

Turkey carpets now cover the best floors. The rooms are wainscotted. The doors are adorned with brass locks and hinges; tongs, pokers, shovels, grates, and fenders are all of polished iron, or brass. Down-beds, soft blankets, fine linnen, damask curtains, mahogany tables, chairs, cabinets, and costly mirrors, furnish every room. The servants garret is now as good as the masters bed-chamber was thirty years ago, and all at the old price of ten shillings a room, and five for a garret during the season. The entry doors are spacious, the stairs magnificent.

THE situation of Bath seems low, if we regard *Situation.* the hills which surround it; it is nevertheless, beautifully diversified. It makes the north-east corner of *Somersetshire*. The greatest part of the buildings stand on an *Isthmus* of declining ground, which forms the tail of *Badonca*, or *Lansdown-hill*. The windows command a pleasing vale for two miles to the north-east, and two to the south-west. The spot where the hot springs boil up, is so advantageously placed in point of height, that, from the surface of the water in the King's-bath to the surface of the river, is a fall of 17 feet 5 inches. The surface of the same river *Avon* at Bath is at least thirty feet above the

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surface

surface of the *Severn*, into which it empties itself a little below *Bristol*. The streets thus have such a gentle declivity, that they are washed by every shower. The Springs can never be overflowed by the river, nor can the interjacent grounds.

*Cliffs.*

The *Cliffs* and *Combs* which present themselves are such beauties, that the author of *Palæ-Albion* declares the vale in which the hot springs boil up, a finer seat for *Apollo* and the *Muses* than *Parnassus* itself.

*Hills.*

The *Hills* which surround the city are not so near as to intercept the cherishing sun beams. The spiral form of the hills screens it from the cardinal winds, admitting fresh breezes through different brakes. The situation of Bath answers all the characteristics of a healthy situation enumerated by Hippocrates. The mineral steams which fly off from the surface of the Baths conduce not a little to purify the *air*.

*Airings.*

There are various airings about the city. The delicate and tender have the turnpike roads to the east and west. There is also a ring 600 yards round almost upon a level, in a gravelly soil, highly situated, defended from north and east winds by *Lansdown-hill*, a part of the city-common, called (from its use) *Hyde-Park*. Those who can bear the air, mount up the hill. The ascent to *Lansdown*, *Kingsdown*, and *Claverton* is now easy for carriages. Their elevation is such that their summits command a variety of prospects beautiful and extensive. Their spacious tops are covered with turf. Their sides are watered with springs which murmur as they descend through the hedges. The longævity of the inhabitants is an irresistible proof of the wholesomeness of the air.

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# Of BATH and BRISTOL WATERS.

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In the year 1702-3, Mr. Justice Merryweather *Air* collected an account of the number and ages of the antient people then living in the city of *Bath* and places within two miles distance, all within the Hundred of *Bath-forum*. The account stands thus :

| Perf. Years. | Perf. Years. | Perf. Years. |
|--------------|--------------|--------------|
| 17 of 70     | 12 of 80     | 4 of 90      |
| 31 of 71     | 13 of 81     | 1 of 91      |
| 62 of 72     | 15 of 82     | 9 of 92      |
| 20 of 74     | 8 of 83      | 2 of 94      |
| 30 of 75     | 10 of 84     | 1 of 98      |
| 16 of 76     | 11 of 85     | 1 of 100     |
| 4 of 77      | 6 of 86      | 1 of 103     |
| 10 of 78     | 2 of 87      | 1 of 107     |
| 3 of 79      | 2 of 88      |              |

The sum total was 26758. None bedridden. Deceased within two years, forty persons whose ages made 3522 years. Now living and lusty 347, none bedridden, whose ages make 27522 years. At *Bradford* near Bath, four sisters make 360 years; the eldest (in December last) rode ten miles single, she being *one hundred* years old then. In the City, three sisters make 247, and three others 225. Within these four years, the nine Aldermen made 700 and odd years. Mr. Alderman Child *Apothecary* remembers when the twelve Alms-people in the Blue-coat-hospital made 1005 years.

The inhabitants of Bath have good complexions, their longaeivity, fruitfulness, and particular health, has ever been remarkable when even epidemical distempers visited other places, as the late Mrs. Chandler justly observes in her poetical Description of *Bath*,

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When

*When fevers bore an epidemic sway,  
Unpeopled towns, swept villages away,  
While death abroad dealt terror and despair,  
The plague but gently touched within our sphere.*

The body of the city stands upon a hard clay and marl, of a blueish colour with stratas of rock, and veins of marcasite. In some places there are beds of gravel. In others, veins of coal. There is no appearance of quagmire, notwithstanding what *Glanville*, *Guidot*, and the late *Olivier* have maintained.

*Soil.*

The soil hardens as we go westward into a kind of marble, called *Lyas*, some white, some grey. The coal pits increase also. Eastward the stratas of rocks are not so large, nor so hard. The beds of gravel increase also to a great depth. If we ascend the hills on the north, east, and south of the springs, we find them incrustated with free-stone, sometimes to a considerable depth.

The *Meadows* are not only rich, but the inclosures are fertile also to the tops of the *Dorset*. The herbage is sweet.

*Fossils.*

Fossils there are in number, chiefly of the spiral figure, such as naturalists believe to have been formed in *Nautili-shells*. About *Cainston* there are numbers of *Adder-stones* curled up, and stuck into the walls. Multitudes of conical stones with elliptical bases are found in almost every stratum of clay and marl. These are called *Thunder-stones*; of a hard consistence, and of a dark colour. Broken parallel to the base, the surface appears transparent with an infinitude of bright rays radiating from the centre, while some of their outsides appear like brass. The *Phoenicians* (according to *Herodotus*) believed that these stones fell from heaven, that they were the real images of the sun.

Hence the Grecians represented their Deities by blocks of stone terminating in a point. The *Venus of Paphos* (according to Tacitus) exactly resembles the figure of our Thunder-stones. There are various shells found in the heart of great stones.

At eight in the morning, Gentlemen and *Manner of* Ladies meet in the *Pump-room*; some to drink water, others to converse. From eight to ten, <sup>*passing time.*</sup> they are entertained by a band of music, the same that plays at the *Balls*.

At ten every body retires to breakfast at their *Breakfast* own lodgings, or Coffee-houses, where every thing is elegant. There are often breakfasts at the rooms to particular parties, sometimes general. There are also *Concert-breakfasts*, with a dance.

After breakfast, some ride out for exercise; *Forenoon.* others walk in the fields, or on the Parades; others go to prayers; others peruse the papers, others read at home.

*Three* is the general hour of dinner. No in-*Dinner.* land town in the kingdom produces such a market. Butchers meat is as good, and as cheap as in London. The mutton is much better. Fish comes from the sea-coast by relays of horses twice a week, quite fresh, and cheaper far than in Town. The soil produces herbage and fruits of all sorts, early and good. Bath-butter, and cheese have long been esteemed. For twelve shillings a week the boarding-tables are sumptuously covered. Private tables are spread almost all alike. Sobriety, frugality, and simplicity reign throughout. Entertainments are rare at Bath. People hurry from table to prepare for the evening amusements.

Striplings are now more careful of their constitutions than their grandfathers were at seventy.

Young rakes who, in town, spend their time in taverns or stews, hardly find a moment for either here. Habit, in time, turns necessity into virtue. By degrees, they come to be weaned from their darling vices.

*Gallantry.* Considering numbers, instances of marriages are very rare. Here people are so continually employed in trifles, that they hardly have a moment to spare on serious thought. Dissipation prevents real impressions of friendship or love. Every moment presents suspicion of gallantry. A Lady of fashion, on her leaving this place, is said to have looked back, uttering these words, *Farewel, Dear Bath, No where so much scandal, no where so little sin!*

*Evening.* About six, the Rooms are open again in the evening. On Tuesdays and Fridays there are *Balls*. The Master of the Ceremonies takes out the Ladies and Gentlemen according to their rank. When the minuets have thus continued for an hour, more or less, partners stand up, and dance country-dances till about nine. Gentlemen then treat their partners and acquaintance, sometimes the whole company, with *Tea*. After Tea, they stand up again to country-dances, which continue till eleven, when the Master of the Ceremonies comes in and points to the *Orchaster*. At his nod, the fiddlers vanish. Those who chuse not to dance, look on, or play in the other rooms. Every person is at home about the hour of eleven.—On Mondays, Wednesdays, Thursdays, and Saturdays, the rooms are open at the same hour. Some play, others converse. Every one retires as he pleases.—On Sunday evenings, the rooms are also open. Gentlemen give Tea. After Tea the company saunters up and down, or get into conversation-parties.



parties, which continue till about nine. Cards are not yet publicly introduced.

There are *Plays* four times a week, and some- *Plays.* times public Concerts with a dance.

Frugal suppers close the scene. The fatigues of the day dispose the eyes to slumber. People hurry to bed to be able to begin the same round, at the hour of eight next morning.

About the beginning of the present century, *Ease and* people of distinction rarely associated with com- *Freedom.* moners. The same shyness then prevailed as now at the *Hot-wells*, and other inferior water-drinking places. The nobility still preserved a tincture of Gothic haughtiness. Smoaking was permitted in the rooms. Ladies appeared in aprons, and gentlemen in boots. The balls were sometimes continued till morning, as was gaming. Chairmen insulted the company.

No sooner were *Rooms* prepared for assembling in; no sooner were *Walks* prepared for exercise, than rank and distinction began to be laid aside. Women of quality deigned to make parties with gentlewomen. Men of real and apparent fortunes became hail-fellows alike. Those who run out their fortunes come hither to retrieve. Those who run out their constitutions come hither to careen. Some live by play; others pay dearly for their noble acquaintance. The learned and unlearned, the wise and the weak, the witty and the silly, the gambler, the fortune-hunter, and the honest man, the well-bred, and the clown, make all an equal figure at *play*. The reflections of those who read are grating insults to those who cannot. *Play* kills time, levels conversation, and distinction. It not only amuses for the time, but (like the *fox-chace*) it supplies chat for accidental inter-

views. Bath is the civilest place in the world, while Bath commerce continues. When that ceases, people naturally resume their natural associations.

*Increase.*

Nothing so common as to hear people say, *Bath will be over-built, Bath must be undone!* Those who make this prognostic, enter but superficially into the study of human nature; they are but little versant in the revolutions of *States*. While Roman and Gallic liberty remained, Romans and Gauls preferred rural employments to unmanly amusements. As at *Bath*, so at *Baia*, medicated waters sprang up, probably from the creation. While rural exercises strung the nerves, mineral waters were rarely wanted. *Baia* and *Bath* were mean country towns; the peasants their inhabitants rarely tasted their waters. As liberty decreased, *Rome* and *Paris* increased. *Baia* became the summer residence of Emperors, Patricians, and Plebeians. Wealth confounded distinction. The sons of freedmen vied with Princes, in their palaces. When the summer season was over, they sojourned to *Rome*. The fruitful *Campania* was so taxed, that it no longer supplied the expence of cultivation. Under Papal tyranny the most fertile plains are now unhealthy deserts. Those proud *Chateau's* which once lodged the brave assertors of liberty, give titles, and no more, to court parasites. Their mossy walls are now the lodgments of owls and bats. Before the war, every garret was full at *Bath*. War has revived the native British spirit. When the war comes to cease, we may venture to presage that *Bath* will again fill. While national debt, extravagance, indolence, or ailments continue to increase, *Bath* never can be undone. Every season adds considerably to the number of its inhabitants. Since *Wood's* days,

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days *Bladud Buildings*, *Edgar Buildings*, *Horse-street*, *Charles-street*, and many other elegant buildings continue daily to be added. For the reasons just assigned, Bath will, in time, become one of the largest and most elegant cities in the world. Nothing but the failure of the springs can prevent it. The public rooms begin already to be too small.

Between bathing, drinking, and amusements, time rolls so insensibly away, that nothing is so common as to hear even people of grave turns complain, *Bath is nothing but the same eternal dull round of nothing*. These very people who thus complain, meanwhile, hardly find one minute for serious employment. The truth is, The learned and ignorant, the grave and the giddy, the rational and the empty, the libertine and the devout, all have it in their power to compleat the hour, day, week, month, and year to their satisfaction. Even humorists meet with people whom they can bear at Bath. Here, every man pursues the dictates of his own fancy.—Visits to the well *Visiting*. are matters of mere form; for, those who are able to go abroad are sure to meet those whom they have not a mind to shun, oftener than once in a day.

Rapping of knockers, and bawling of footmen are rather cruelties than civilities; for, every lodging house is an hospital. When invalids come to recover, so as to be able to finger the cards, they can be at no loss to make home parties of such as pretend to be sick of the Rooms. While people are really ill, it would be more humane to suspend the *How-d'ye's*.

The only nuisances which now remain, are the *Nuisances*. precarious fees of *Lodging-house-servants*, together with that cruel noise of *Bells*, and *City-Waits*, sport

sport to rude ears, death to those who slumber on beds of languishing.

*Nash, his  
office and  
character.*

At Bath the defects of *Statute Laws* are supplied by those of *Good Breeding*. Honorary Laws prevent evils which fall not under the cognizance of penal. The noble and ignoble, the polite and the rustic, are equally restrained by the same imaginary authority. Necessity the parent of society set up a Titular King, or Ruler of singular power. This was the province of NASH, a man of address, a polite scholar, a gentleman, and a gambler, the founder of his own empire. His business was to promote charities, prevent duels, and determine quarrels. In obedience to his dictates, gentlemen laid aside their swords, and ladies dressed as at court. His influence exempted the city from the quartering of soldiers. He calculated the diversions so as to improve, but not to impair, health. For full fifty years, his voice was a law to those who could be swayed by the laws of good manners. The refractory were rebels to the community. When, by hoary old age, his senses began to be impaired, his services continued to challenge respect. The Romans adorned the statues of their imperial destroyers. Nash found the natives of Bath in narrow circumstances; he left them in affluence. The following character hugely suits the man:

“ Like *Petronius* of old, Nash was created *Arbiter Elegantiarum*, or *Master of Ceremonies*. By  
“ signal indolence and idleness, he raised himself  
“ to renown. Nor was he yet deemed a slave  
“ to his grosser appetites, like many who brutishly and lavishly devour their estates. In  
“ luxury he was curious and refined; and, as  
“ his actions and sayings were frank and unre-  
“ strained,



“strained, all accompanied with an air of negligence, the more pleasing they were, bearing hence the impression of pure simplicity, and artless nature.”

Security has ever been the distinguishing characteristic of Bath. No where such opportunities of thieving. No where so few thefts. Those robberies which happen, are at *private play*.—The tradesmen are honest, obliging, and insuspicious. Any person may find credit for meat, drink, and raiment at Bath. If he finds ready money for his laundress, hair-dresser, and shoemaker, he may cut and caper with the best. Security.  
Confidence.

Time and accidents have altered the narrow conceptions of the aboriginal natives. The commerce of the waters has changed the manners of the people. The government of the city is vested in the *Corporation*, the members of which are substantial citizens, men who govern without insolence, while they execute the laws with spirit. — No streets are so well paved, none so well cleaned, lighted, or watched. The market is as well comptrolled as furnished. Smoaking, singing, rioting, and promiscuous nocturnal Baths are no longer permitted. Vagrants are banished. Complaints are summarily redressed. Lawless games are prohibited.—But what, above all, distinguishes the *Bath-Corporation* is, that (in electing their Representatives in Parliament) they may be deceived, but rarely any have been bribed. While Corruption had almost spread its universal influence, to their credit be it remembered, the Bath Electors unanimously solicited, and chose the *Restorer of national honour*. Manners.  
Police.  
Public-spirit.

The *Pumpers* place is the only office let out by *Pumpers* lease, that is charitably bestowed (for a short term of years) on some decayed citizen. The rent

rent of the waters is kept at a rate below its real value, that the voluntary gifts of the drinkers may more effectually answer the pious intention of the Magistrates.

*Baths  
free.*

Bathers pay nothing for the liberty of the Baths. The *Serjeants, Guides, and Cloath-women* are poor inhabitants who earn their pittance by their services. The Corporation expends its whole revenue in purchasing, repairing, building, altering, or ornamenting, the Baths and the City. They long for the restoration of ancient convenience and splendor. Their revenues are unequal to the work.

## CHAP. II.

### *Of the Natural History of Bristol Water.*

*Bristol  
stones.*

THE city of Bristol is washed by the river *Avon*, which, before matter came to be hardened into stone, forced its way through fat fertile meadows about a mile below the city. These rocks consist of solid variegated marble, which takes a fine polish, and sometimes is used for slabs and chimney-pieces, but chiefly for burning to lime or in building. In the chasms of the rocks, red bolar, or martial earth, may be discovered. Concretions of crystal are also found, some colourless, others tinged of a flesh colour, yellowish, bluish, purplish, &c. These are hard and brilliant; hence they obtain the name of *Bristol-stones*. On the tops of the cliffs, various shell-fishes are found petrified, such as are unknown to our coasts, *Nautili, Cornua Ammonis, Corals, Coraloides, Madripores, &c.* The river disembogues itself at last into the *Bristol-channel*, or *Severn-sea*, the waters of which are fouled for many leagues even beyond the Land's-end.

At

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At about a mile's distance from the city, and *Spring its*  
at the foot of one of the highest cliffs, in that *rise.*  
part where once stood a chappel consecrated to  
the legendary saint *Vincent*, rises the spring, which  
bubbles perpendicularly out of the rock in the  
sloping bank of the river, between high and low  
water mark. From this St. Vincent's rock, the  
fountain takes its name, *St. Vincent's Well.*

This water was originally inclosed in a brick *Antient*  
cistern, out of which came a wooden pipe, which *state.*  
emptied itself into a little pond beneath. In this  
pond people washed their sores as at other super-  
stitious places.

When the tide rose high as the spring, it  
mixed with the water, and fouled it so as to ren-  
der it unfit for use till the next ebb, when the  
foul water ran out, and the spring recovered its  
pristine purity.

In the year 1691, the City of *Bristol* built a  
circle of stone and mortar round the spring. This  
they raised higher than the tides were wont to  
rise. The weight of such a column of water  
had well-nigh destroyed the spring.

In 1695, the *Merchants-Company* of Bristol, *Improved.*  
proprietors of the land where the spring rises,  
granted a building lease of the ground from the  
*King David's Head* to the well, and a long way  
beyond, with the rocks behind, and a part of the  
skirt of the *Downes*, to a certain company of Ad-  
venturers, for the sum of *five pounds* yearly  
ground-rent. They recovered the spring; and,  
at a considerable expence, made a foundation for  
pumps, which raise the water now about thirty  
feet, in the center of a house whose thick walls  
keep off the river water. They built several  
houses also adjacent to the pump. All which,  
together with the well, they sublet to others,  
reserving

reserving to themselves *nine-pence* a dozen, clear of all deductions, for all water sold or exported.

The present Leases took care to inclose the well under an arch so nicely cemented that no external water can be admitted into the cistern, yet do the spring-tides and heavy summer-rains constantly affect the water.

*Water  
fouled.*

How this comes to pass, we are now to endeavour to account for. The *Neep-tides* rise to about 20 feet. The water is never affected by this, though it rises above the spring considerably. But, the *Spring-tides*, which rise to the height of 40 feet, higher or lower, as the wind blows with, or against the tide, constantly foul the water. This foulness lasts about five or six hours. As the Spring-tides thus over-spread the banks, the salt water penetrates through the fissures of the rocks. In its way it meet with some of those ooziings which concentrate in the medicated spring. That this is the case we cannot doubt, if we attend to another common phenomenon. In the summer, when the ground is parched, a sudden shower fouls the water for five or six hours. But, the more it rains, the well-spring is the less affected, and never in the winter.

The pumpers know when to stop, i. e. when the waters are to be affected by the tides, by the river's rising to particular marks. As to the effect of summer-showers, they have no other test but that of change of colour in the water.

These vicissitudes of *clean* and *foul*, are matter of no small speculation, and no less anxiety to people unaccustomed to disappointments; they depend on causes no less certain than the vicissitudes of the moon, which (as to change and full) are as constant, as the time of our sleeping and waking are inconstant. To these  
we



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we must add summer-showers, which are inconstant also.

HAVE there been any attempts made to prevent this communication of salt and rain-water with the spring? Yes, the Leases, at a considerable expence, employed Mr. *Padmore* an Engineer, who, after much thought (like a great philosopher of old) is said to have died of heart-break, because he could not accomplish his design.

Sometimes the water is fouled by a heavy summer-shower; all of a sudden it becomes clear, though the rain continues. Why this should happen from a long continuance of rain has already been accounted for; but why it should happen all of a sudden, we are now to enquire; for I would save the pumpers ears as much as my subject will admit of. About three feet higher than the spring, there is placed a pipe of about six inches diameter, for conveying the redundant water into the river. At the external opening of this pipe, there is fixed a valve, which is shut close, as soon as the influx of the tide reaches it. Thus the well-water, confined, rises immediately, and throws off the rain-water that fouled it but just before.

Once the water appeared much fouler, thicker, and more reddish than ever, and that at a time when there was no remarkable high tide, or rain. Next day it was clear. The same phenomenon appeared at all the wells round. The news of the Earthquake at *Lisbon* solved the phenomenon. On the very same day, same hour, and minute, happened the one and the other.

EXACTLY to calculate the quantity which the spring affords is not easy, nor is it of great importance. From the observation of people tolerably well versed in these matters, it has been computed

HISTORY, ANALYSIS, and VIRTUES, computed to discharge about 40 gallons in a minute. Bristol-water is known to every corner of the world.

*Airings.*

THE *Downes* are flat, and spread with a thin dry carpet of turf, which covers the rocks. These produce variety of aromatic plants, which afford pasture for cows, horses, sheep, and asses, the milk of which is excellent. On these *Downes* the water-drinkers exercise themselves on horse-back, or in carriages, from whence they command the ships at anchor at *Kingroad, South-Wales*, and the *Channel*. Here they breathe the sea-air, which affords a breeze in the hottest weather. This air refreshes and strengthens the lungs. There is a variety of other rides on both sides of the river, on downes, turnpike-road, or through lanes. The roads are kept in good repair.

*Accommodations.*

THERE are elegant *Lodgings* in the airy village of *Clifdown* for such as keep carriages. Nor are the lodgings unwholesome which are built on the bank of the river; for though the banks are muddy and unseemly, the air is prevented from stagnation by the constant vicissitude of the tides, which impregnates it with variety of saline particles. When the ships are carried up and down through the meadows, and between the trees, the prospect seems indeed enchanting, as the masts and sails are often beheld, while the hulks glide along unseen.

*Provisions.*

PROVISIONS of all sorts are to be had at Bristol. The neighbouring villages afford plenty of early fruits, and of excellent garden-stuff of all sorts, with milk, butter, cheese, and bread.

There are accommodations still wanting, such as exceed the power and spirit of private adventurers. The proprietors of the Hot-wells are the Bristol Company of Merchants united. The  
Tenants

Tenants are a company of adventures, who, after great expence, have considerably enlarged their dividends. The original lease expires in about twenty years. These adventurers would gladly pay a gratuity for the renewal of their lease; then would they lay out considerably in building. Some of the members of *Merchants-Hall* are willing to renew the lease. Others, no strangers to the sweet profits, long for the expiration of the lease. Thus, for the aforesaid space, the public is like to suffer through the effects of contending interests. There are also nuisances.

On the bank of the river, just opposite to the *Nuisance*. *Hot-well-walk*, there now stands a *Lead smelting-house*, from whose cupola there constantly issues a thick cloud of *flores saturnini*, vapors fraught with poison. In countries regulated by *police*, such manufactures are built on waste grounds, or near the sea-shore. For the sake of the cattle, these have been indicted no farther off than in Wales. At Britain's second Bethesda, vapors highly deleterious continue to infest the lungs of Commoners, Nobles, and Princes.

### CHAP. III.

*Of Principles common to Bath, and Bristol Waters.*

THAT Mineral Waters were in use among *Antients* the antients we have seen. Strangers to *acquainted* physical institutions, these followers of nature *with Mineral Waters.* first directed them from an imaginary opinion of their contents. Experience extended their use to numerous diseases. Nor were the moderns, who first pretended to treat the subject, more expert. Gold, silver, tin, lead, mercury, antimony, arsenic, sal-armoniac, and many other imaginary principles, were supposed.

M

CHEMISTRY

Chemical  
experi-  
ments their  
use.

CHEMISTRY began, at last, to lift the rational doctrine. Lord Chancellor Bacon's *Novum Organum* contains a rational scientific method of investigating the natures of things. By this art of *Induction* we are enabled to discover the contents, virtues, and uses, of mineral waters. Chemical experiments are not to be rejected because they cannot amount to mathematical demonstration. This objection bears equally hard on every art whose principles are employed in medicine. Every hypothesis is liable to error; for this reason, man is fallible. Chemistry promises verisimilitude, which, if we modestly pursue, we may avoid the paths of ignorance, rashness, and arrogance. The very pillars of physiology are founded on chemistry. Digestion, chylickation, sanguification, and the secretions, are all nature's chemical processes. By the help of chemistry, we are enabled to separate mixtures the most compound, to exhibit principles, or contents, to the cognizance of sense. Experiments demonstrate what our dull senses can never discover, viz. That water is capable of dissolving and suspending the hardest bodies, and the heaviest metals. Nor is the art of chemistry, particularly that branch of examining waters, so difficult as is commonly imagined. Those who have a mind to catch the weak by their weak sides may consult Boyle on Colours, Boerhaave's Chemistry, with Hierne's Appendix to his *Acta & Tentamina Medica*. In examining waters, judgement is more requisite than genius. The means of discovering their contents, virtues, and uses, are already in the hands of man; nothing more is wanting to compleat the work, than a prudent scientific manner of using the means; or, to speak more plainly, the art of Induction. The bodies which dissolve in waters without altering



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altering their transparency, seem, by experience, reducible to *Air, Spirit, Salts, Earths, Iron, and Sulphur*. Whether (by the help of chemistry) these are to be discovered in Bath and Bristol Waters, is the subject of this present inquiry.

FOR health or amusement, Bath and Bristol *General indolence.* Hot-wells have, at different times, been frequented by chemists, naturalists, and philosophers. The number of physicians has kept pace with the increase of patients. Without evidence or proof, Bath Water, time immemorial, has been accounted sulphureous, alkaline, saponaceous, &c. Bristol Water ferrugineous, aluminous, chalky, and God knows what. The public has hardly been favoured with one rational analytical inquiry, worthy so to be called. As was the theory, such has been the practice. The waters have, now and then, performed surprizing cures. Had they been rationally directed, their virtues could not have remained such secrets as they now are. Critically to examine every author who has pretended to analyze Bath and Bristol waters, were labour lost. In disproving imaginary principles, opinions fall to the ground. What avail reasonings about *Alkaline Salts*, when nature presents not one grain of alkaline salts in waters? What avail pompous exhibitions of *Nitrous Salts*, when nitre never yet existed in mineral waters? What avail argumentations on *Sal Vitriol*, when the acid of Vitriol is only to be found? Heat, fire, and brimstone, are ideas vulgarly jumbled together. Gaping at clouds of smoke, ignorants naturally dream of sulphur. Mayow was the first who had the courage to deny the existence of sulphur in Bath Waters. By Guidot and all his contemporaries, he was branded with the odious

M 2                      epithet

HISTORY, ANALYSIS, and VIRTUES, epithet of innovator, and novel-writer. His allegations and their objections, are mere *ipse dixit*; for me they may rest in peace.

Experiments carefully made, and honestly related, challenge indulgence, even when they fall short of conviction. There are certain tribes of substances calculated for discovering the principles of waters, which are the surer for having been tried, which have held, and will hold when we are forgotten.

Of Analysts now asleep, Keir is the only name worthy of remembrance. The Doctors Charleton and Lucas are the only living. From analogy, from experiments, old and new, it is my purpose, coolly and candidly, to ballance arguments, combat error, and elucidate truth. By joint endeavours, we hope the nature and qualities of both waters will be better ascertained; we hope also that their sphere may be extended. *Veniam damus, petimusque vicissim*. So much for Introduction: we now proceed to principles common to Waters in general, to those of Bath and Bristol in particular.

#### I. Of AIR.

*Air.*

To demonstrate the existence of water in water were labour lost. The first principle that presents itself in water is *Air*. Air seems to be, more or less, contained in every water.

*Experiments.*

1. SUBJECTED to the air-pump, Bath and Bristol waters dart air bubbles from the bottom of the vessel to the surface.

2. BRISTOL WATER just pumped, appears of a whitish colour, owing, doubtless, to the great quantity of bubbles which it contains. As it cools, these bubbles disappear; nor can this whitish colour, ever after, be restored; a manifest

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fest proof of their having lost something very subtle.

3. SET over a fire, in an open vessel, Bristol Water covers its sides with small air-bubbles. As it increases in heat, these bubbles increase in number and bulk. They mount up to the top with such rapidity, that they put on the appearance of boiling, before the water comes thoroughly to be heated.

4. I filled a quart bottle with Bath Water at the hot-bath-pump. Over the neck of the bottle I bound a large bladder, well oiled on the outside. The bladder immediately began to swell, and pressed upwards, filled two-thirds with elastic air, hard as if so much of the bladder had been blown up by the mouth.

5. HAD this experiment been made on Bristol Water at the pump, the same phenomenon doubtless would have appeared. Prevented, at the time, from going over to Bristol, I, in like manner, bound a bladder over the neck of a large quart bottle of Bristol Water. I placed the bottle before the fire. The air gradually began to distend the bladder, before the neck of the bottle, which was left empty, felt hot; compressed upwards, it exhibited an elastic ball, one third of its capacity.—This experiment may always be produced by heat, often without. My authorities are *Chrouet's Connissance des Eaux minerales d'Aix de chaud Fontaine, et de Spa*, p. 68, & *Shaw's Enquiry into the contents of Scarborough Waters*, p. 137—139.

6. *Statistical Essays* vol. i. p. 181, and vol. ii. p. 267, the ingenious Hales has extracted and determined the different quantities of air contained in different waters.

*Air and  
spirit dif-  
ferent  
principles.*

7. To know whether this was air or spirit, Dr. Shaw made the following experiment. He filled an open cylindrical glass with the fresh purgative Scarborough Water, and put it under the receiver of an air-pump, then exhausting the air, till it ceased to emit any more, he took the water out, and put a little powder of galls thereto. The water changed its colour, and turned purple, as strongly as before it was set under the receiver. Whence he infers that the mineral spirit did not escape along with the air-bubbles, and consequently that these air-bubbles and the mineral spirit are different principles. This conclusion he confirms.

By the common experiment with galls he found that the chalybeate Scarborough spring contained more of the mineral spirit than the purging. By the experiment of the air-pump he found that the purging water discharged more air-bubbles than the chalybeate. He filled a quart bottle with the last, to which he fitted a bladder, as before described. The ball of subtle matter was not above one fourth-part so large as in the other. "This experiment (he infers) therefore, if found constant, intimates, that air and mineral spirit are two things; and that where the one is largely contained, the other may be less. And it is chiefly on account of this large portion of air, naturally contained in the purging water, that we rather incline to make it a principle; for, if no more air could be discovered here than in common water, or the ordinary sorts of purging waters, such as *Epsom, Dulwich, Aston, &c.* there could be no just foundation for making air a principle." *Vide Enquiry into Scarborough Waters, part ii. sect. 6. p. 140, 141.*

II. Of



II. Of SPIRIT.

1. BATH and Bristol Waters fresh drawn from the pump, manifestly sparkle, and throw off a mist or vapor. After standing in the open air, they put off this appearance. *Spiris.*

2. BATH and Bristol Waters fresh drawn from the pump, seem grateful to the stomach, and cheer the spirits. By standing in the open air they lose these properties.

3. BATH and Bristol Waters drank at the pump have a sort of intoxicating quality, give an alacrity, or occasion a head-ach, drowsiness, or ebriety. Drank at a distance, warmed or cold, they have no such effects. Hence may we infer that both these waters contain a spirit. Nor were the ancients unacquainted with this property. In his book *De Architectura*, lib. viii. cap. 3. Vitruvius expresses himself thus; *Sunt etiam fontes uti vino mixti, quemadmodum est unus Paphlagoniae, ex quo etiam sine vino potantes fiunt temulenti.*—Such are mentioned by Ovid, in his *Metamorphosis*:

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*Lyncestius amnis*  
*Quem quicunque parum moderato gutture traxit,*  
*Haud aliter titubat, quam si mera vina bibisset.*  
*Quodque magis mirum est, sunt qui non corpora*  
*tantum*

*Verum animos etiam valeant mutare liquores.*  
*Cui non audita est obscenae Salmacis undae,*  
*Æthiopesque lacus? quos si quis faucibus hausit,*  
*Aut furit, aut mirum patitur gravitate soporem.*

Lib. i. cap. viii. Valerius Maximus mentions one spring in *Macedonia*, and another in *Agro Caleno*, quo homines inebriantur.—In his *Quæst.*

*Natural. Lib. iii. cap. 20.* Seneca assigns this spirit as one of the causes of taste in waters; quotes Ovid, to confirm his opinion in assigning this spirit as the cause of ebriety.—In his *Hist. Natural*, lib. ii. cap. 103, and lib. xxi. cap. 2. Pliny makes mention of the Lyncestian water causing drunkenness.

*Gravity  
of waters.*

*Proved by  
experi-  
ment.*

4. AFTER the departure of air and spirit, one would naturally expect some sensible change; and indeed it seems reasonable to think that the specific gravity of waters were thus increased, as their absolute comes to be diminished. Hoffman used a graduated instrument for ascertaining the weight of different waters. He suspected that the elastic spirit buoyed up the instrument; that therefore the experiment was less to be depended on, the specific gravity increasing as the spirit evaporated.—Dr. Short (in his *History of Mineral Waters*, p. 56. 45. 164. 170. *Edit. 1734.*) subjected certain medicated waters to the air-pump, or exposed them in an open vessel. He found their specific gravity thus increased; he assigns the reason. “Exinde liquet aquam aliquas particulas amisisse, quae quoniam neque vehiculum ipsum, neque fixa ejus contenta sunt, aer aut spiritus prorsus sunt censendae.”—Dr. Home (in his *Essay on Dunse Sparrow*, p. 160. 163.) bottled up some of the water, corked it close, and, after some time, found it lighter by some grains. He sagaciously assigns the reason; the escape of the *Spirit*.

*\* From ana-  
logy.*

5. NOR is this opinion of the spirit of waters inconsistent either with reason or analogy. Water becomes insipid after having been exposed to the air. The same happens to oils and wines; they lose their strength, virtues, smell, and taste; they become vapid. The same happens to aromatic plants. Nothing proves the text so much as liquor

liquor in the state of fermentation, which continually throws up air, together with spirit manifest to the senses. See *Boerhaave's Elements Chem. Part iii. Process xii. & xiii.*

6. WHAT laws this spirit is subjected to, *Spirit its* seems still to remain a secret. Hoffman thinks *laws.* the *Thermæ* are sooner deprived of their spirit than the *Acidulae*. This author seems not to have sufficiently distinguished between air and spirit; nay, he seems to have confounded the one with the other, under the common name of spirit. Heat certainly rarifies and dissipates air; air escapes without spirit, and spirit escapes without air, as we have seen.

7. WHAT sort of spirit this may be, or in what *Spirit its* form it exists in waters, we are now to inquire. *nature.* Naturalists in general, maintain that the spirit of waters consists of iron or oker, minutely subtilized. When they come to explain its manner of existence, they differ. As (under the head of *Air*) we have fully explained, some are of *Consists of* opinion that this metal is divided into minute *metal dis-* particles, and suspended by the means of a cer- *solved by* tain *Acid*, which, as they say, is the proper menstruum of metals. This seems to be Hoffman's opinion; nor is he clear on the head; he speaks of an "aethereo quodam valde mobili, ac subtili  
" fluido, spiritu universali, fonte & causa omnis  
" spiritusascentiae, sedem suam, vim, atque virtutem maxime collacatam habente in sulphure,  
" substantia valde tenui, fluida, admodumque  
" elastica, et volatili, cum universali minerali-  
" um sulphureo ente combinata, omnesque terrarum tractus pervagante, anima quasi mineralium, variarumque mutationum, & effectuum qui in promptuario subterraneo contingunt, causa." *Hoffman. Element. Aquar. Mineral. recte dijudicand. & examinand. §. 8. 16. 18.*  
*alibique*

*alibique passim.* According to this opinion, the spirit of water is no more nor less than a *volatile vitriol*. Those who contend for this doctrine, maintain that as this subtile acid flies off, it carries along with it some particles of iron, which it suspends in solution, that it precipitates, or leaves others behind in form of an ochraceous martial-like matter, as in the experiment mentioned with the powder of galls. Astringents are said to absorb or blunt the *Acidum solvens*, by which the particles of iron once dissolved now precipitate; hence change of colour. Nor can this be supposed to be owing to any volatility of dissolved metal; for, let but a vitriolic acid be added to any ferrugineous water, that (by the escape of the acids) has become effete, the gall-tinging quality is forthwith restored.

That there exists a certain *Universal Vitriolico-sulphureous Acid*, which pervades every thing, and which (by dissolving iron) constitutes the spirit of mineral waters, from positive proofs we learn.—“Take an alkaline salt, expose it to the air “in a place where neither damps, vapors, nor “sun can approach, it will be converted into a “*Tartarus Vitriolatus*.”—Mineral fumes are inflammable. Collected in bladders, they may be carried to any distance. Opened near a candle, they catch fire. When ore is poor, miners shut up this vapor, that (by being imbibed by the phlogiston) it may enrich the metals, heighten their splendor, and make them malleable. Mineral fumes contain a portion of the phlogiston; the more they are impregnated with this inflammable principle, the more volatile, powerful, and penetrating, they are. Dr. *Teichmeyer*, professor of physic in the university of *Jena*, relates a memorable instance of a chalybeate spaw, in the Lordship of *Cracow*, a manifest proof of our text.

This



This spaw was, not long ago, set on fire by lightning, which occasioned no small damage to the adjoining forests, and was with great difficulty extinguished. It is remarkable, that this fountain may be kindled at any time, by the means of a candle. But, it is as remarkable, that this water, removed from the well, cannot be set on fire. This author adds that he could relate several methods by which the inflammable principle of mineral waters might be made patent to the senses. "When (continues he) in the manner aforesaid, medicinal waters exist, then the acid becomes invigorated by the phlogiston contained in the mineral fumes, it dissolves the finest parts of the *Iron Earth*, which solution is, at the same time, attracted by this *principium inflammabile*, and incorporated with the water concrete."—In his proposals for printing *Analytical Experiments on the Bath Waters*, Dr. Linden undertakes to entangle this volatile Gas, so as to subject it to examination.

These fumes cannot be said to be the products of fire, because, when they meet with fire, they burn. Air is the agent that constitutes, moves, and disperses these fumes thro' the bowels of the earth. This appears by that affection, or readiness with which it unites with the external air.

9. THAT Vapors, air, or fumes are necessary *Air vitri-* adjuncts in the composition of mineral waters we *olic.* cannot doubt. Hoffman quotes a modern instance from Lic. Andrea. A chalybeate well in the Dukedom of *Wirtemberg* all of a sudden lost its virtue and efficacy. The reason of this change was found to be owing to the digging of stone-cutters, which accidentally broke through a cavity of the rock, out of which issued a strong mineral fume. The cavity was immediately ordered to be carefully closed up, and the well recovered

HISTORY, ANALYSIS, and VIRTUES, vered its pristine qualities. See Dr. Turner's *Appendix to his Herbal*, printed at Coln, page 4. Dr. Seippius has recorded a similar account in his *History of the Pyrmont Waters*, page 48.

This vapor is of an acid nature, none other than that *Acidum universale*, or *Vitrioline acid*, which has its birth in the bowels of the earth, and not in the ocean as *Stahl* and *Newman* have proved by experiments too long to be here inserted.

*Acid of  
sea salt  
what.*

THAT the acid of sea salt owes its production to the *vitrioline acid*, we know by the trite experiment. "Smelt common salt with the simplest *phlogiston*, destitute of salt or acid, then may some brimstone, and even a little vitriol, be produced."

*Air volatile.*

10. THAT this acid is of a subtile volatile nature we cannot doubt, if we allow ourselves to be guided only by our senses. It impregnates the air so that it proves offensive to some asthmatics. It corrodes all the iron-works in and about the Baths. Copper-rings have, for this reason, been bequeathed for the use of the Bathers to hold by, as may be seen by the inscriptions thereon recorded.

*Deprived  
of air wa-  
ters be-  
come secu-  
lent.*

11. As this acid vapor flies off, the water becomes turbid, so that the bottom of the Baths can hardly be discovered at the depth of two or three feet. The earthy parts which were before suspended by means of this mineral acid spirit joined to the natural heat, now preponderate, and adhere to the sides of the glasses, and to the walls of the Baths, in the form of a pale ochrous earth. In the closest and quickest corking, this vapor so far escapes, that some precipitation is formed by the time that the water cools.

Such Chalybeate waters lose their texture as soon as they come to be exposed to the air.

They

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They are unfit for exportation ; at a distance they are nevertheless friendly to many constitutions. The iron earth is the matrix in which the vitrioline acid is generated ; yet it is well known that neither all iron minerals, nor the same, at all times, are provided with this acid ; for so, all common waters would be chalybeates, because there are hardly any which have not, in some part of their passage, a communication with iron ore. When a water meets with an iron ore vein that contains a portion of the acid vapor, this vapor is concentrated with the water ; the Chalybeate spaw becomes complete. When it meets with too great a quantity of the acid, it is useless or noxious.

When the air meets with that *Sublimate* which Basil Valentine calls the *seed of metal*, and which Linden calls the *Metallic nutriment*, which exists in a soft state like the *Butter of Antimony*, and that subsists in quantity, then this matter is brought by the *Acid* in the air into agitation, by which it receives additional substances. These fumes arise, in some places, more abundantly than in others.

12. Dr. Teichmeyer relates an Experiment *Air and acid their* that proves the great power of the *Air* and the *acid their* *Acid* therein contained. " He exposed filings of *joint powers* " *Iron* to the open air, rain, snow, sun, and moon-  
" shine. In a year's time, these filings were re-  
" duced to a *Crocus*, which he washed and lae-  
" vigated. This he exposed for twelve more  
" months. Then he put it into a *Retort*, and  
" distilled it gradually through all the degrees  
" of fire. In the neck of the *Retort*, he disco-  
" vered a black greasy stinking *materies viscosa*,  
" *et quasi butyrofa*, in which was contained a good  
" portion of *Quicksilver*." " This experiment  
" (says

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“ (says Linden) which I could corroborate with  
 “ many instances, evidently proves that the *Air*  
 “ has power with the primogenial *Acid* therein  
 “ contained, without any other addition, to open  
 “ the iron so that it may yield its mercurial con-  
 “ tents.”

*The acid  
 proceeds  
 from the  
 Pyrite.*

13. THIS acid proceeds from the *Pyrite*, which disunited composes the *Bath-sand*, the *phlogiston* or inflammable principle having escaped. The phlogiston thus fled, the acid of the sulphur forms an union with the metallic parts of the *Pyrite*. This constitutes the chalybeate principle.

*Chalybeate  
 waters  
 consist of  
 iron dis-  
 solved in  
 an acid.*

It is well known that acids dissolve iron. Alkalies and absorbents precipitate iron. Chalybeate waters consist of iron dissolved in some kind of acid. Galls and astringent vegetables act as absorbents, and cause a precipitation, in colour, from different shades of purple or blue to black, according to the nature of the acid in which the iron is dissolved, and the proportion of the saturation, or strength of the solution. The stronger the solution of the metal, the more of the astringent will be required, and the deeper the colour will be struck, and, *e. c.* This knowledge accounts for the mystery of dying.

*Experi-  
 ments.*

15. EXPERIENCE tells us that volatile and fixed alkalies attract acids which before kept earths or metals in solution. The metallic or earthy parts are precipitated, and a neutral salt is produced which determines the nature of the acid.

SPIRITS of hartshorn, or Sal-ammoniac, dropped into a glass of Bath-water hot, causes an ebullition and a milkiness with a yellowish hue which gives a light precipitate of the same cast, and throws up an earthy pellicle. The like effect is wrought in the water cold and well corked, though



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though more slowly, less sensibly, and more whitish.

THE acid saturated with the volatile, or fixed alkali, gives Glauber's secret *Sal-ammoniac* in the one, and *Vitriolated-tartar* by the other, which proves the acid to be *vitriolic*.

Hence the absurdity of prescribing *volatile-alkaline salts, spirits, soap, milk, &c.* with waters hard in the strictest sense. Bath-waters are utterly unfit for all domestic purposes. They thicken, strengthen and harden, instead of resolving or relaxing.

ALL the simple as well as fermented vegetable acids mix naturally and easily with Bath-waters. Distilled vinegar causes no change of colour or other alteration. The mineral acids, except in a concentrated state, or when the vitriolic is added in such a quantity as to excite more heat, mix kindly.

16. To this doctrine of *Acids*, the trite experiment with *Syrup of violets* generally used to prove the existence of an alkali may seem repugnant. It must be confessed that this syrup turns the waters to a *sea-green*, and in eight hours after to a *bright grass-green*. *Objection.*

17. THIS is an appearance that overbears those who deny the existence of an *alkali* in chalybeate waters. And to say the truth, this has perplexed learned and ingenious men, who, by not considering the matter deeply, yielded up the point to those who maintained an *alkali*. Let us hearken to *Linden*. Page 114, he says, "This mistake *Answered:*  
" arises from not properly distinguishing the  
" differences in matter. Iron Vitriol has such  
" a green colour as the syrup of violets assumes  
" when mixed with chalybeate waters, yet there  
" can be no man so ignorant as to imagine that  
" this

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“ this proceeds from an alkali, as the acid predominates so much in the compound.

“ Verdigrease is perfectly green, manufactured with vinegar and copper. I know no alkali that is necessary to this; the copper appears in blue crystals when dissolved and crystallized.

“ Pour *Aqua fortis* on *Iron ore*, it becomes instantly green. Supposing even an alkali in the iron ore, the green colour cannot be owing to that, because the acid is predominant, and were there alkali enough in the ore to occasion this green colour, it would discover itself by an effervescence.

“ The solution of perfect iron yields a green colour as soon as it is dissolved by acids. Thus, we see by how many various ways green colours may be produced; therefore may we conclude that the green colour in these aquatic mixtures is essentially inherent in the *Iron ore*, without assistance of alkalies, syrup of violets, or any thing of the like nature.

“ But, Whence is it then that this green colour is produced?

“ Syrup of violets contains an iron earth, from it may be produced an iron earth by art.

“ The acid in the chalybeate water is checked by the mucilage of the iron ore, which is probably the true reason why the water preserves its crystalline purity unmixed.

“ Syrup of violets sets acids and alkalies at liberty. It acts only naturally when it sets the acid free from the *mucilagium ferri*; the more it subsides, the stronger the green colour appears; the acid works naturally on the iron earth dissolved into atoms most minute. This is the real cause. For if this green colour of

“ the

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“ the syrup was owing to an alkaline quality  
 “ of the waters, that share of alkali requisite to  
 “ produce it would constitute such a disproportioned  
 “ ingredient that they would be as cautious as *Soap-lees*, which is by no means the  
 “ case.”

BATH WATER curdles milk, as every nurse *Bath Wa.* knows. Powerful, nevertheless, as this *Acid* *ter curdles* appears to be, it does not alter the colour of the *milk.* juice of *Turnsol*, the *Heliotropon tricoecum* of C. Bauhinus.—Aken Waters recover spots made in paper by *Acids*. So must Bath Water, had it (like the former) contained an *Alkali*.

BRISTOL WATER, as it boils, loses its pellucidity, and deposits an earthy chalky-like matter on the bottom and sides of the vessel. Thus *Bristol Water* it comes to be robbed of its mineral acid. *acid and volatile.* It now becomes soft, fit for domestic purposes, of mixing with soap, washing, brewing, &c. That Bristol Water contains an *Acid*, and that this acid is of a volatile nature, the following experiments evince.

1. A glass of Bristol-water poured on a few grains of *Sal Armoniac*, dissolved it immediately with a sensible effervescence.

2. Spir. Sal Armoniac with a fixed alkali produced the same effect.

3. Solution of *Sal Tartar* produces the same effervescence; but gives the liquor a milkiness which praecipitates a whitish light earthy substance.

4. Solution of *Soap* curdles and makes the water turbid.

5. The same substances poured into common water distilled, produced no sensible change.

6. In different glasses of common water distilled, were dropped *Spir. Vitrioli*; in others other *mineral acids*. To these were added

N

volatile

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volatile alkaline salt, volatile alkaline spirit, fixed alkaline salt and solution of soap. The same appearances arose as when these were first added to the Bristol-water.

HENCE may we conclude, That these waters do contain an *Acid*. By means of this *Acid* it is that (in the two first Experiments) the effervescence is produced. In the third, the additional circumstance of the *milkiness* arises from the fixed alkaline solution attacking the acid of the waters more strongly than did the calcarious earth, by means of which it is no longer dissolvable, but becomes cognizable in form of a white praecipitate, which was in a saline state while united with the acid, and so soluble in water.

In the fourth, the *Soap* becomes decomposed, the *Oil* swims on the top, while the *Acid* and *Alkali* lay hold of one another.

If these waters are kept but a day, corked never so close; or, if they are boiled, and then these experiments made, neither the effervescence nor the decomposition will appear. The milkiness and the praecipitate will insue, because the waters are robbed of their power of dissolving earthy substances.

HENCE it is also manifest That the *Acid* of these waters is of a *volatile* nature.

*Bristol  
water  
neutral  
and vitri-  
olic.*

7. To determine the nature of this acid, let us drop a solution of *Silver in spirit of nitre*. The mixture puts on the appearance of milky, and deposits a white praecipitate.

8. In a glass of water pour a solution of *Lead* in the same spirit, the same phenomena appear.

FROM these trials it is demonstrable that the alkaline basis of *Sea-salt* is contained in these waters; for (by the union thereof with the nitrous acid) an *Aqua-regia* is formed which dissolves gold,



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gold, but touches not silver, nor lead. In consequence of which the praecipitation insues.

9. Pour a solution of *Quicksilver in spirit of nitre* into a glass of water, it grows turbid and deposits a yellow praecipitate, which confirms the foregoing experiment.

10. To solutions of Bristol-water turbid or praecipitated by *Spir. Sal. Armon. Sal. Tartar, Calx viv. &c.* pour *Oil of Vitriol*, the transparency is immediately restored.

11. *Ol. Tartar per deliq.* added to that which contains *Oil of Vitriol*, a great effervescence insues, and the heat goes off but slowly.

12. Solution of Silver was added to the water. To this was added *Sobp-lee*, which caused a black praecipitate by standing, which could not be disturbed by *Spir. Sal Armoniac*.

Hence we may infer that this water contains a great share of *Phlogiston*, with vitriolic spirit medicated and absorbed by a calcarious earth.

13. To a glass of water, *Scarlet-dye* was added. A small praecipitate insued, the upper part remained of a fine scarlet colour. As soon as *Spir. Sal. Armoniac* was added, it struck an opaque purple colour.

Hence may we conclude that this water is, in its natural state, neutral in all respects, rather inclinable to the *vitriolic acid*, which is the reason that it continues its scarlet colour; but, as soon as an urinous spirit is added, then the *Cochineal* loses its scarlet colour, and turns to purple.

14. The water was also tried with *blue dye*, and *pompadore*, without any alteration. This confirms the last experiment. From the sum and substance of the foregoing Experiments, we may conclude that the whole nature and texture of

# HISTORY, ANALYSIS, and VIRTUES, Bristol Water, not even its warmth excepted, depends on the *Vitriolic Acid*.

*Spirit said  
to consist  
of iron  
without  
the acid.*

THERE are others who maintain, That the spirit of waters consists of iron particles dissolved without the interposition of an acid. In support of this opinion these urge, That a sort of ink may be prepared, by infusing pure iron in simple water, saturated with the powder of galls. Nor does Shaw disown the fact, *See his Enquiry into Scarborough Waters; p. 151—158.*—In infusions of filings of iron with water distilled, there appear certain phenomena, not dissimilar to those which may be seen in mineral waters, *See Home's Essay on Dunse-spaw, p. 157, 158.* The subtile particles escape in form of spirit, the heavier praecipitate as in solutions of iron by acids. If so, why (say they) may not iron in like manner, be supposed to be dissolved in mineral springs?

In his Essay on Dunse-spaw, p. 60. 62. 157. 160. Home observes, that some of the ferreous particles settle on the surface, in the form of a thin pellicle, not unlike to that which is commonly observed on the surface of lime-water.—In Dr. Whytt's ingenious Essay on *Lime-water*, p. 62, 63, & 74, 75. he has experimentally disproved the existence of an acid in Lime-water.—Shaw's Experiment with astringents seems no less to favour this opinion than the other. If the powder of galls, tea-leaves, or any other astringent praecipitate iron, by absorbing the acid, may not the same phenomena be expected from alkaline substances? From such mixtures, such appearances never happen. They therefore conclude, that this effect of galls ought rather to be attributed to that astringent property common to such substances, by which they attract the particles of iron, and thus tinge water  
blue,

blue, purple, or black, by which the heavier particles also fall to the bottom. This opinion they think confirmed by the following experiment. "In his *Experiments and Observations on Chalybeate Waters*, Dr. Hales observes, That "many natural waters, after they had deposited their oker, and afterwards suffered such a degree of corruption as to be thereby resolved (by the help of powder of *Galls*) put on as intense a colour, as if they had been just taken up at the fountain-head." Hence they infer, that the spirit of waters is iron *per se*, or incorporated with *Sulphur*, or some other principle, divided into particles most minute by the chemistry of nature, without the interposition of an acid. Nor does this opinion differ from the former, otherwise than in the manner of the solvent. In both, the spirit of waters is allowed to consist of iron, or oker minutely subtilized, one by the help of a volatile vitriolic acid, the other without. In his elaborate inaugural dissertation *De Thermarum antiquitate, contentis, et usu*, Swinhow seems inclined to the latter. His words are these; "Tamen hanc sententiam per-tinacius profiteri nolum, dico tamen, in praesenti, mihi visum probabiliorem." From analogy as well as from arguments and experiments stated and compared, I am inclined to believe, that Bath and Bristol Waters contain a *Spirit*; that this spirit consists of *Iron* subtilized and suspended by the means of an *Acid*, and that this acid is none other than that *Universal Vitriolico-sulphureous principle* which pervades the bowels of the earth, and which constitutes the life, soul, and spirit of medicated waters. So much for principles common to Bath and Bristol Waters; we now proceed to peculiar.

## C H A P. IV.

*Of Principles peculiar to Bath Water.**Black  
slimy cakes.*

1. **T**HERE are *Black slimy cakes* which float on the surface of the Baths during the spring and summer months.

These substances have (by late inquirers) been affirmed to be aquatic plants conveyed, by the aqueous fluid, through the crannies of the rocks, to the spring-head, the *Jelly-moss*, or *Conserva gelatinosa*, *omnium tenerrima & minima*, *aquarum limo innascens*, of Ray.——In the Magazine for May last, Dr. Linden finding that where this green substance appeared near stones, a perfect salt was deposited, denies its being a vegetable. He tried it with the *Spirit of Vitriol*, and maintains it to be the *Mucilago ferri*, or the real and identical slimy substance contained in every rich *iron ore*, tinged *green* by the *Vitriolic-acid*, one of the component principles of Bath-water.

*Oker.*

2. THE Baths, as far as high-water-mark, are lined with a pale yellow substance; so are the conduits, which carry off the redundant water.

*Heat of the  
different  
Baths.*

3. To discover the different degrees of *Heat*, the following trials were made.

By Fahrenheit's *Thermometer*, the hottest spring in the *King's Bath* raised the mercury to 103 degrees. In the coolest part of the same bath to 100. In the *Hot Bath* it stands at 100 or 101. In the *Cross Bath* 93 and 94. The *Queen's Bath* is only a reservoir from the King's: it raises the mercury to 93 and 94.

The heat at the *pumps* varied by every trial. At the *Cross-Bath*, the mercury descended from 110 through all the intermediate to 105. The



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Hot-Bath from 116 to 112. The King's from 116 to 114.

The lowest trials equal the heat of the human blood in a healthy state, and (according to Hippocrates) are therefore friendly to the constitution.

4. WEIGHED, Hot Bath-water appears to bear *Gravity*. the ratio of oz. 4 : 6 : 0 : 12 to oz. 4 : 6 : 0 : 16 cold.

By these Experiments we learn, That the different springs are differently impregnated, and differently heated ; their produce also is different. We learn also that they spring not from the same source ; for if one of the cisterns is kept empty, this prevents not the cistern at the head of any other spring from filling in its usual time, notwithstanding all the springs break out within the compass of half an acre, in the form of a triangle whose base measures 415 feet, its longer side 380, and its shorter about 110.

5. THE sources of the springs are considerably higher than the surface of the cisterns when full, as appears by the ebullition of the springs on the surface of the water, bubbling with a force equal to that of boiling water. This ebullition is not only a proof of their antiquity, but (as Pliny remarks) a sure indication of their perpetuity. What seems to confirm this, is the flagrant proof of their rising also perpendicularly from a very great depth. For *sewers* and *drains* have been made almost in every square perch of ground round about the springs to the distance of 500 feet, for foundations, wells, and other uses ; witness that of 1727, that of the *Duke of Chandos's*, that of *Alfred's Ditch* ; and, above all, that of *Thayers* a depth twenty feet below the surface of the Baths, a depth sufficient to

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drain every penetration above the surface of the  
river.

The cold springs which burst up round the  
hot, are unquestionable proofs of their rising  
not only from a great depth, but that they are  
fortified with ridges against their irruption. With-  
in the memory of man, no less than five springs  
of cold water have issued forth within 500 yards  
of the Baths.

Those abatements which have happened with-  
in these fifty years seem to be owing to imper-  
ceptible leaks between the surface of the water  
in the cisterns at low and high water.

*Contents  
of the  
Baths.*

6. In the year 1693, Mr. Gilmore, a Teacher  
of mathematics, gauged the several cisterns. By  
his account the King's Bath contained 427 tons,  
50 hogsheads, 16 gallons. According to the best  
observation in his days, this cistern filled in nine  
hours and forty minutes. So that, in the space  
of twenty-four hours, this spring produced about  
1060 tons. When Leland wrote his *Itinerary*,  
it turned a mill. Of this quantity of water, no  
more than 732 tons commonly found its way  
into the bath; for the spring has, time imme-  
morial, been covered with an inverted cistern  
sunk below the bottom of the bath, from which  
the rest of the water is conveyed by a pipe into  
a drain that conducts it to the river. To this  
it is owing that the water of this bath is more  
temperate than that of the Hot-Bath.

*Time of  
filling.*

7. THE cistern at the head of the *Cross-Bath*  
contained 52 tons, 3 hogsheads, 16 gallons.  
It filled in about eleven hours and a half.

The cistern at the head of the *Hot Bath*  
contained 53 tons, 2 hogsheads, 11 gallons.  
It filled in about the same space with the *Cross*.

Thus,

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Thus, the produce of the three springs appears each natural day to have amounted to 1282 tons, exclusive of what was pumped out, and ran to waste through the sluices.

Generals premised, we now proceed to investigate the particular *principles*.

### I. OF IRON.

UNDER the heads of *Air* and *Spirit*, it fully appears, That (by the interposition of the *Universal Vitriolic Acid*) Iron is not only dissolved, but suspended also in waters; that, as this acid escapes, the walls of the baths and the conduits become incrustated with a pale or yellow oker; that waters, vulgarly and improperly termed *Chalybeate*, lose their texture, by being exposed to the air, and become unfit for exportation; that the iron-earth is the matrix in which the vitriolic acid is generated; that when a water meets with an iron-ore vein, which contains a portion of the universal acid, the acid vapor comes to be concentrated with the water, the chalybeate spaw becomes complete; that when it meets with too great a quantity of the acid, it becomes noxious, and that this acid proceeds from the pyrite, which disunited, composes the Bath-sand. Thus, the acid of the sulphur forms an union with the metallic parts of the pyrite. This constitutes the ferrugineous principle of Bath-waters, as by the following tests will appear.

THE first mineral substance that presents itself to our view, is that *Sand-like substance*, thrown up at the sources of the springs, especially when the inverted cisterns are taken up to be cleaned.

1. To the taste, this substance is ferrugineous, and manifestly styptic.

2. The

2. The water in which it is washed, strikes a blue with an infusion of logwood, and a purple with galls.

3. The residuum, calcined till it ceases to fume, moved to the magnet, some particles are attracted.

4. The Baths and drains are lined with a yellow oker.

5. With infusions of logwood, galls, tea, pomegranate-bark, balaustine, &c. the waters fresh pumped, change to purple. Thus the ferrugineous principle seems incontestibly to exist. We now proceed to determine the portion of iron contained in a given quantity of water.

Quantity  
of iron  
contained.

6. In the third volume of the *Edinburgh-Medical-Essays*, we find an Experiment recorded by that great Naturalist, Professor Monro, which enables us (with some sort of certainty) to determine the quantity of iron contained in waters. He observes that the proportion of iron in its salt, or vitriol is little more than one third. If one ounce of this salt of steel be dissolved in 20 ounces of water *Troy-weight*, 142 drops of which solution weigh two drachms, every such drop will contain  $\frac{1}{7}$  of a grain of iron.

Charle-  
ton's pro-  
cess.

" Dr. Charleton (in his Treatise on Bath-water, page 9) dissolved 240 grains of salt of steel in 10 ounces of water *Averdupois*, and found (by an accurate ballance) that 97 drops let fall from a small glass tube weighed two drachms exactly, each containing  $\frac{1}{7}$  of a grain of iron. The difference of weight in the drops he thinks were owing to the different weights by which the water was weighed.

" He digested one ounce of *Galls* powdered, in a pint of rain water in a gentle heat for some days, and so proceeded.

" He



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“ He dropped the tincture of galls from a glass tube in different quantities into pint glasses, filled them with water hot from the pump; and (by repeated trials) found that ten drops of this tincture brought the water of the great pump-room to the highest tint, and that five drops were sufficient for this purpose in those of the *Hot* and *Cross Baths*. The mixture in the first gave a warm, rich, rosy purple. The mixtures in the two last gave shades lighter.

“ To imitate the colour of the *King's-Bath* water he added two drops of the solution of iron to three pints of pure rain water. Thus an artificial chalybeate water was produced, one pint of which struck (with ten drops of the tincture of galls) a purple, from which that of the natural one was not to be distinguished but by the richness of its tint.

From all which he concludes, “ That the chalybeate principle (in a pint of the *King's-Bath* water) is equal to the quantity of iron contained in two-thirds of a drop of the solution; which, by calculation, comes out to be  $\frac{1}{70}$  of a grain nearly, and that, (in the *Hot* and *Cross* Bath waters) there is only  $\frac{1}{140}$  part of a grain.”

“ Dr. Lucas (in his book of Mineral Waters, *Lucas's process*, page 293) having found the quantity of the infusion of *Galls* that caused the deepest dye in the *King's-Bath* water, and having charged a certain number of glasses filled with equal quantities of water with different quantities of solution of iron, found the colour nearest to that in the Bath water was produced with the like quantity of the infusion of galls in the glass that contained the solution of iron, in the proportion of two drops in a pint. So that each pint of *King's-Bath* water

ter may be supposed to contain about  $\frac{1}{37}$  of a grain of iron.

“ Bath-water poured on clean filings of iron, there arise air-bubbles which buoy up the particles of iron to the surface; and, as the air-bubbles break, fall down again to the bottom. This continues till the water looks like a muddy solution of iron, which soon happens. It now acquires a much stronger vitriolic taste, strikes a beautiful rich purple with the infusion of galls, of which it admits double the quantity that the simple Bath-water does to strike its deepest dye. As it cools, the iron separates, and falls like rust to the bottom, while it throws up a variegated pellicle. It then retains its gall-tinging quality, but not so strong as when hot. The colouring matter does not praecipitate in this saturation so readily as in the thermal-water alone with the same infusion.”

*Conclusion.*

From the corroborating proofs of both these Inquirers, we may reasonably conclude, That Bath-water is impregnated with *Iron*. The extreme divisibility and tenuity of the metal is the workmanship of wise nature, who deals out her most sanative compositions in quantities which, as they surpass the reach of our shallow researches, so they heal safer and surer than waters deeply loaded.

## II. Of SALTS and EARTHS.

*Charle-  
ton's pro-  
cess, Salts.*

1. In his fourth Chapter, Dr. Charleton evaporated a quantity of Bath-water. He observes, that the surface was covered with broad thin pellicles. The sides of the vessel were incrust- ed with a hard saline white matter extremely pungent.

To

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To know whether this was a salt or an earth, he evaporated a larger quantity of water. The saline mass neither fermented with acids, nor changed its colour with syrup of violets; nor does the white concretion that sticks to the sides, yield any other than a perfect neutral salt, when dissolved and crystallized. Hence he concludes that this alkaline principle does not consist in salt, *but in an earthy matter.*

He dropped a solution of *Silver in Aquafortis* into a glass of water, which turned milky, and the metal subsided. Hence he infers that common sea salt makes a part of the contents. He makes also a salt whose crystals are long and slender, resembling *Lifter's calcarious Nitre*. These he has exhibited in a plate.

By evaporation, and distillation, he found 34 grains of residuum in 56 cubical inches, or one quart of King's-bath water. His proportion of the water to its contents is in the ratio of 417 to 1. Of 20 grains of the residuum 6 vanished in salt. The neutral were to the marine as 2 to 5. Hence, in a wine quart, we have 5.714 grains of the first, and 14.285 of the last.

2. Page 312 Dr. Lucas evaporated these waters carried to London. He found the *Crystals* Lucas's process, Salts. *Selenite* indissoluble in water; nor did they lose their form by boiling, or calcination.

With acids they caused an ebullition, particularly mineral. With oil of vitriol they raised a smart effervescence, with white fumes, like those of sea salt. Thrown on live coals, or red hot iron, they fumed slightly without visible flame, or acid vapor, without calcining, fulgurating, or crepitating.

He washed (page 314) a sufficient quantity of the residuum to give some drachms of salt. He evaporated these filtrated washings to a pellicle, and

and set them at rest to cool and crystallize. In about 24 hours, he viewed the liquor, and found it partly shot into fair small crystalline prisms. He repeated the process with the uncrystallized liquor; it gave some crystals of the same form, but much smaller, deformed with small cubical crystals of sea salt. He repeated the process; it shewed a thicker pellicle which soon fell to the bottom, and there remained undissolved. It now was sea salt chiefly. He then evaporated the whole to dryness, and found it almost entirely sea salt, but not perfectly white, retaining a little of the oily matter which discoloured it, but not bitter enough to make it grow moist in the air.

The washings slowly evaporated left a white salt weighing 19 grains, the proportion of saline parts in a quart of King's-Bath-water.

Thirty-two grains of the residuum, being the solid contents of a quart of Hot-Bath-water, gave about 20 grains saline.

Thirty-five grains and a half of residuum of the Crois-Bath-water gave  $19\frac{1}{2}$  grains saline.

As well as the prismatic salts can be separated from the cubical, the first makes one third of the whole. Neither the washing of the residuum, nor the solution of the salts, cause any commotion with acids, nor any remarkable change with syrup of violets. Hence no *alkali*, no *nitre* of the antients. Though it has the appearance of nitre, it wants its distinguishing characters. It answers the character of Lister's *nitrum calcarium*, a natural bitter purging salt like that of *Glauber's*, whose composition is an union of the vitriolic acid with the mineral *alkali*, or basis of sea salt, the true neutral salt of *Bath-waters*.



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3. "Dr. Charleton (in his definition of the *Charle-*  
*Bath-sand*) says, *and pieces of chalky earth*. Page *ten's pro-*  
53 he adds "This alkaline principle does not *cess,*  
" consist in a *salt*, but in an *earthy* matter." *earth.*

Page 58 he adds "After these salts are intirely separated from the residuum, there remains an earthy powder of a white colour, and a perfectly insipid taste. 1. It does not ferment with oil of tartar, or with any of the alkaline class. 2. It gives a faint green to-syrup of violets. 3. It ferments violently with spirit of vitriol, and all other fossil acids. 4. Calcined it fermented more strongly with acids than before, but did not increase the heat of common water, nor did any hissing or ebullition succeed. 5. He added a little borax and tallow, and placed it in a wind-furnace for some hours. When the mass was grown cold and pounded, the Load-stone drew several small particles of iron from it.

"From these experimentshe confidently concludes, That the earthy part of the Bath-water is of an alkaline nature, but it does not appear to be derived from brimstone, as, in that case, it would have shown its peculiar properties after *calcination*, and consequently have produced an ebullition with spring water, and increased its heat.

"The earthy ingredient is to be obtained by mixing salt of Tartar, or its lixivium; for immediately, large white clouds appear and at length praecipitate in a fine powder, which (after being well washed in several waters to separate any part of the alkali which might have adhered to it) fermented violently with all the acids in general.

"This powder shows no sign of inflammability whatever; it is merely an insipid absorbent alkaline chalky earth.

"Twenty

"Twenty grains of a part of the residuum of a pint of King's-Bath water gave 14 of earth. One quart of the Hot-bath gave 30 grains residuum, of which 17 were earth. One quart of the Cross-bath left 30 grains residuum, of which twenty were earth."

*Lucas's  
process,  
Earths.*

4. Dr. Lucas (page 313) says "The earth left in the filtering-paper causes some ebullition with all acids, a very small portion blunts their acidity. The vessel used in evaporation is covered with a terrene substance from the circle which the upper surface of the water at first filling describes to near the bottom. The solid contents are of a pale ash colour, partly of a gritty soft sand-like substance, partly made up of bright shining little crystals taken together with some sort of astringency from the terrene parts which predominate, without making the least acrid or lixivial impression on the tongue. Calcined in a crucible in a wind furnace for twenty minutes, it becomes much whiter, more rough and absorbent, with some light sense of lime-like acrimony. Though before it yielded nothing more in water, now it gives the taste and all the qualities that lime does to distilled water; for the washing of it changes syrup of violets green, causes no ebullition with acids, and is rendered milky by fixed and volatile alkalies. Some portion of it is attracted by the magnet.

"In order to judge the quantity of calcarious earth, and distinguish it from the selenite, he threw six grains of the earth of each water into half a drachm of diluted spirit of salt; an ebullition arose. When the action of solution ceased, he added some drops more of the acid. He diluted it farther with distilled water, and then distinctly saw the lamellated crystals of the selenite,

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nite, which washed and dried, weighed three grains and a half.

"Hence a two-fold earth, the one *selenitous*, the other two grains and a half of the *calcarious* contained in the washings, which was easily discovered by alkaline ley, &c.

"Thirty-three grains of the residuum, the solid contents of one quart of *King's-Bath-water* powdered, infused in half an ounce of distilled water, and raised to a boiling heat, this water decanted, and new water added, decanted, filtrated, &c. this repeated till the water came off insipid, the indissoluble mass dried weighed 13 grains and a half, which may be looked upon as the earthy part contained in one quart.

"Thirty-two grains of residuum, being the solid contents of a quart of *Hot-Bath-water*, gave 12 grains earth.

"Thirty-five grains and a half residuum of the *Cross-Bath-water* gave 16 grains terrene."

5. WHEN I had almost prepared my book for *Author's* the Press, I happily met with Dr. Linden, a *process*. German, to whom the secrets of *Metallurgy* and *Minerallurgy* are truly familiar. He generously offered his assistance in repeating the experiments on Bath and Bristol waters. I freely accepted his offer. We tried the waters at the pump. In Mr. Morgan's Elaboratory, and in his presence, we proceeded to experiments on the *Residua* of Bath and Bristol Waters. By these our joint endeavours, we hope the nature and qualities of both waters are better ascertained; we hope also that the sphere of both waters may be extended. For my own part, I frankly own that the experimental part of my book is much more to my own liking; I blotted out with more pleasure than I wrote. I wish my labours may be satisfactory to the public. I have endeavoured

O

voured to please; if I fail, my endeavours will administer some consolation. Let facts speak for themselves.

## I.

*Experiments.*

Twenty-nine pints of King's-Bath water were filled at the cock in a wickered bottle, and carried to Bristol, where it was put into a glass retort in *B. A.* The water steamed away gently, without coming to a boiling heat.

There appeared no pellicles, no change of colour in the liquor. To the upper part of the retort there appeared clear pellucid salts. The particles which fell to the bottom were also salts, rather insipid to the taste.

There were no earthy parts perceptible to the naked eye, excepting some few yellow specks.

## II.

A pint and a half of the evaporated water was caught in a vessel which received it as it dropped from the mouth of the retort. This had the appearance of a bittern of common salt. This was put into a Florence flask, which was again committed to the sand. The liquor continued transparent. There precipitated a calcarious earth, in appearance of the nature of *Magnesia Alba*. The same magnesia, or earth, if it is to be so called, may at any time, be obtained from common bittern. When waters are evaporated in large, flat, open vessel, not a little external dust adds itself to the process. By precipitant boiling, salts are changed into insoluble opaque earths. Thus the evaporating liquor changes its natural pellucid colour into unnatural terrestrious, unctuous, browns, madeiras, &c. Hence the *calcarious earths* of former inquirers; hence their *successions of pellicles*; hence their *calcarious nitres*; hence their *alkaline* and *nitrous salts*, with their other imaginary principles. Alkaline



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kaline salts are artificial earthy productions. The volatile acid of the salt is detained by the alkaline earth, and mixes so closely that both pass together through the filtre. When these cause an effervescence with acids, the phenomenon is owing to the alkaline earth which constitutes the basis of the neutral salt, which gives the purging quality to the waters. The powder which puts on the appearance of *calcarious earth*, is none other than Bath-quarry stone dissolved by the vitriolic acid. To confirm this assertion, "Let this same stone be dissolved in spirit of vitriol, then mixed with water; let the water be poured off after settling, you have the calcarious earth. If it is precipitated with water distilled from lime and soap-lees, the earth will appear to be Bath-quarry stone."

### III.

EXAMINED in a microscope, the salts put on *Salts* the forms of six or seven crystals of different sorts. On the different forms into which crystals shoot, little stress is to be laid. Our senses are too gross to dive into the elemental structure of bodies; so that, for aught we know, there may be as many elemental differences, as there are species of salts; or perhaps all salts, in their ultimate elements, may be the same. This we know, that no two salts of the same denomination will, upon trial, answer the same proofs in every respect. We beg leave only to observe, that the Bath-water salts crystallized in *B. A.* so does Borax, in opposition to the common nature of simple salts. Hence we infer, That out of Bath-water-salt a perfect Borax might be manufactured.—The Salt of the first evaporation seemed to have a vitriolic taste.—That of the lixivium evaporated, had a large share of the marine.

## HISTORY, ANALYSIS, and VIRTUES,

rine. The lixivium may now be seen colourless, of the very consistence and taste of Brine.

## III. Of SULPHUR.

*Sulphur.*

1. IN waters hot and cold, *Sulphur* seems to dwell, though it is often difficult, sometimes impossible, to exhibit it corporeally. In the Baths of *Austria* and *Hungary*, Dr. Browne not only observed true flowers of sulphur sticking to the conduits, but also declares that the waters, in a few minutes, turned silver black, and heightened the natural colour of gold, *Philosoph. Transf. No. 59.*—In the Caesarean Baths at *Aix la Chapelle*, flowers of brimstone are sublimated by heat, and collected in pound-weights.—Harrigatespaw (according to Dr. Shaw) contains actual brimstone floating like feathers, separable by simple straining.—In *Acidulae* as well as *Thermae*, Dr. Short has discovered signs of sulphur, *History of Mineral Waters*, p. 54, 55. 88. and through the whole latter part. See *Migniot's Traité des Eaux Minérales de St. Amand*, p. 13. 20. 23.—In *Moffat Waters*, Plummer, the late learned professor of chemistry, has discovered many signs of sulphur; *Edinb. Med. Essays*, Vol. i. Essay viii.—In *Scarborough Waters* putrified, Shaw has discovered sulphur, though he could not in the water fresh, *Enquiry* p. 136.—Of *Dunse Spaw* we have a similar instance, by the ingenious Home, p. 78. 90, 91.

2. Migniot and Blondel (treating of the waters of *Aix*) record a very singular remark, viz. “Not one grain of fixed sulphur can be obtained from even those waters which not only smell strong of sulphur, but throw up handfuls of flowers of brimstone.” The former expresses

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expresses himself thus, " Si on vouloit nier que  
 " les eaux d' *Aix la Chapelle* soient sulfureuses,  
 " on n'auroit qu'à lever une des pierres de mas-  
 " sonerie de leurs bassins, & on trouveroit des  
 " fleurs à poignées ; cependant ou a eu beau  
 " tourner le corps des eaux en tout sens, on  
 " n'a pû encore reussir d'en tirer un seul grain,  
 " non plus que des notres. *Traité des Eaux Mi-  
 " nerales de S. Amand, p. 22, 23.*"—The latter  
 thus ; " Omnes hi fontes *Corneliani*, &c. sul-  
 " phur maxime olent, habentque oleose dissolu-  
 " tum, ac balsamicis mixtum. Illud, in aquis  
 " his & *Caesæranis* ita subtile est, ut in aqua-  
 " rum examine, qualiacunque vasa, etiam vitrea  
 " pertranseat, et ne granum illius colligi aut vi-  
 " deri possit." *Therm. Aquisgranensium & Por-  
 cetanarum descriptio, Cap. v. p. 80.*

The celebrated Hoffman seems to have been mistaken, when he rashly pronounces his opini-  
 on, That there are very few springs which con-  
 tain sulphur in any shape. By what from ana-  
 logy has already appeared, his experiments seem  
 to be too general, and too much confined. There  
 are waters which run hot with an abominable  
 stench, and which tarnish not silver, yet exhibit  
 manifest signs of a volatile subtile sulphur, suffi-  
 cient to convince us that they are impregnated  
 with that principle ; nor are they the less salu-  
 tary for being slightly saturated.

Excepting Mayow, till these our latter days,  
 Bath-waters have universally been accounted sul-  
 phureous. To argue on imaginary opinions  
 were labour lost. On the existence or non-ex-  
 istence of sulphur, depends the rationality of  
 practice. The question of sulphur cannot,  
 therefore, be indifferent. We proceed to ana-  
 lytical inquiries.

## HISTORY, ANALYSIS, and VIRTUES,

Not many years ago, Dr. Lucas came to Bath possessed with the common opinion of sulphur. Disappointed in certain leading experiments, he roundly denied its existence. He made his experiments in public. His arguments seemed then to me conclusive. Subsequent experiments have since induced me to alter my opinion. *Dies diem docet*. From analogy, from the experiments of former inquirers, and those of our own, I am not without hopes of being able to convince the candid and impartial, That Bath-waters are, really and truly, sulphureous.

1. MUD, taken up fresh from the bottoms of the Baths, smells manifestly of sulphur.

2. BATH-SAND, sprinkled on a red-hot iron, emits a blue flame, with a suffocating vapor.

3. To Dr. Lucas the public is indebted for the discovery of a fraud, which had blinded the understandings of learned and unlearned, and which was, on all occasions, adduced as an irrefragable proof of sulphur, I mean the trick of transmuting shillings into guineas. He bribed one of the women guides, and she divulged the mysterious menstruum, *Stale Urine*. Had this gentleman bestowed as much of his labour in proof of the existence, as he has done on the non-existence of sulphur, he would have succeeded better. Let the public judge.

*Lucas's  
process.*

a. He dropped a solution of silver in an alkaline ley into Bath-water. He observes (page 299) that it grew milky, and put on a putrid smell; a double decomposition ensued, of sulphur and of earth. He asks, "How then can Bath-water be a solution of sulphur, or sulphureous, when it gives no indication of that mineral, and is not even capable of suspending it in solution?"

His



His own assertion proves the existence of sulphur: for, by the same parity of reason that acids precipitate the sulphur out of the alkaline solution, the sulphur contained in the water mingles with the sulphur in the solution, while both come to be precipitated by the acid contained in the water. Were there no sulphur in the water, this separation could not insue, the whole would unite into one neutral concrete.

β. In sulphureous waters, there is no such thing to be expected as a solution of sulphur, such as is produced by art. In Nature's Elaboratory, the particles of sulphur are not dissolved, but suspended.

He mixed a solution of *Corrosive Sublimate* (page 303), and observed that the mixture put on a slight milkiness only, without precipitation. From this appearance he says, *Had there been sulphur in the water of any sort, a milkiness, and a precipitation must have ensued.*

γ. He mixed a solution of Quicksilver (page 304) with Bath-water. This raised a bright milky cloud, growing suddenly opaque, and then changing or precipitating to yellow, which, upon stirring, grows white again. Instead of this yellow being produced by the *imaginary sulphur* of the waters, he affirms that this colour and precipitation are produced by the union of the absorbent earth and the universal acid.

To the two last, and all his other mercurial experiments, we beg leave to offer one general answer. Such prove nothing. Had the Bath-waters been sublimated, as they ought to have been, and then been found not to change colour, they might then have justly been pronounced void of sulphur. The production of the union of the absorbent earth and universal acid is merely hypothetical, or rather proves the ex-

## HISTORY, ANALYSIS, and VIRTUES,

istence of sulphur; for, if common brimstone is dissolved in order to make *Lac Sulphuris*, the precipitate is white. But, if the sulphur is separated from *Antimony*, or any other mineral, then indeed an orange-coloured praecipitate insues. The springs must be supposed to rise through a brimstone quarry to produce this yellow colour. In the Bath-waters the sulphur is only suspended in small atoms.

5. He mixed a solution of *Silver*, page 305. This (he says) caused *bright bluish white* clouds which soon coagulated, appeared *opaque*, and praecipitated suddenly in grumes.—These bluish white clouds, &c. are evidences of the existence of sulphur; for, from experience we know, that (in the bowels of the earth, as well as in *Smelting houses*) Brimstone coagulates all metals and minerals that are in a dissolved state. Hence it is, that the sulphur contained in the Bath-water acts its natural part, it reduces the silver dissolved in the *Aqua fortis* into a solid state, a manifest proof of sulphur.

6. He supposes the dissolvent acids either *pure*, or mixed with *martial*, or other *earths*, or inflammable principles. As they happen to be colourless or coloured, so they form different *Luna cornua's* with the metals which they attract.—These are hypothetic doctrines; for, if solvents contained *coloured*, or *colourless earths*, or inflammable principles, they could not dissolve metals, while they were in possession of such contents. Hence, may we venture to affirm, That the colour which this ingenious artist places in his solvent, was the production of sulphur contained in the Bath-water.

7. Solutions of *Sea-salt* (he says) produce the same effects with solutions of sulphur, and from the same causes. His words are these, "Had  
" there

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“ there been sulphur, or any portion of the inflammable principle mixed with the waters, every apothecary’s apprentice knows that muddy yellow, dark brown, or black clouds must appear; as we find in solutions of orpiment and quick-lime; or in solutions of silver in volatile alkalies; or, by means of quick-lime and Sal Armoniac; or, by decoction of quick-lime; or a solution of hepar sulphuris. These turn a solution of lead in any vegetable acid, yellow, reddish, or of a dark-brown black, as the waters of *Aken* do at the source. But, if they are deprived of their *phlogiston*, they only cause such white clouds and precipitation as the Bath-waters do. Whence, with assurance we may conclude, That there is neither sulphur nor phlogiston in Bath-waters.”

These plead neither for or against sulphur. The phlogiston never evaporates; nor is it in the power of chemistry to separate it from water, be it ever so vapid; as may be demonstrated from common electrical experiments. The waters of *Aken* may be deprived of their volatile spirit, which has a share in the production of colours; but this has no connection with sulphur.

He then proceeded to evaporate the water (page 310) without any sensible smell. The residuum, thrown upon an ignited iron, fumed slightly without visible flame, or acid vapor, without scintillating, fulgurating, or crepitating. Had sulphur and nitre entered the composition, the effects of gun powder must have ensued.

These experiments prove nothing; for cathartic salts, and many other things will fulminate without sulphur, while others again will not fulminate with sulphur.

0. He

0. He concludes in these words, "Let the inordinate lovers of brimstone know, that sulphur actually dissolved, is decomposed in the evaporation, the phlogiston flying off, while the acid saturates the alkaline salt; that digestions of the residuum with *Salt of Tartar* may heighten the colour, but this proceeds from that oily substance which is inherent in water in general; that this is no solution of sulphur appears from this, that acids cause neither stench nor praecipitation in the tincture, which must have happened had they contained sulphur."

We have just observed, That this same *Phlogiston* is far from being volatile. It is of an unctuous nature, it is the cause of colour, and splendor in metals. Was the phlogiston to evaporate in boiling, how could the smelter produce metal out of his furnace? Sulphureous smells cannot be produced from waters so slightly impregnated with sulphur as ours are. To discover the existence of sulphur therefore in Bath-water, mixtures of metallic solutions (as we observed before) are unavailing and exceptionable experiments. Sublimation is the ordeal trial. By *Sublimation* we hope to demonstrate, that Bath-water changes its colour, and answers all the characteristics of real *Brimstone*.

*Experiment 1.*

*Author's  
process.*

ONE ounce of Bath-water mud, or rather praecipitate, taken up at the bottom of the King's Bath, smelled most sensibly of sulphur. I mixed one ounce of this mud, with a half of an ounce of white *Arsenic*. The mixture was put into a Florence flask, and sublimated in *B. A.* In the neck of the flask there was produced a deep orange colour, or reddish arsenic, of the nature of *Auri-pigmentum*,



*Exper. 2.*

With the same materials, and, in the same manner, the same experiment was repeated. The same exactly were the appearances.

*Exper. 3.*

The residuum of the evaporation of twenty-nine pints, mentioned under the *Section of Salts*, and *Earths*, about two drachms, for it was not weighed, was with equal quantities of *white Arsenic* put into a Florence flask, and sublimated as in *Exp. first and second*. In the neck of the flask a sublimate appears inclining to yellow. For, as yellow, or red inclining arsenic cannot exist, or naturally be produced, nor artificially imitated without the help of real common brimstone, it is therefore plain from experiments 1, 2, 3, that the Bath mud, or praecipitate, contains a perfect sulphur. These Experiments are so much the more to be depended on, as it is well known that arsenic will always attract sulphur, be the quantity ever so small, or entangled. The deeper the orange yellow, or ruby-like colour the arsenic is tinged with, the greater is the quantity of sulphur. Newman, Stahl, Henckel, Potter, and other naturalists, maintain that there are no metalline, or mineral ores without arsenic, nor, consequently, mineral waters. Those waters in which arsenic predominates, purge and vomit. As Bath waters neither, in general, purge nor vomit; and as they, in part, owe their heat to mondic, or pyrites, we may hence infer, that they contain sulphur; enough, at least, to subdue the poisonous quality of the arsenic, without defeating its salutary purposes.

4. There are blood-warm waters, such as *Buxton*, and *Taffy's-well*, which are warm without sulphur.

fulphur. These contain no sulphur, nor any mineral whatever. Their warmth proceeds from a steam, which arises from marle, or rotten limestone. But there are no waters which contain salts, destitute of sulphur; for salts cannot be generated without sulphur.

5. That Experiment of Boerhaave's adduced to discover the fraud of sulphur suspended in alkaline salts, or golden tincture, bears no analogy with Bath or any other sulphureous water. For, in waters truly sulphureous, the sulphur is mixed with the aqueous fluid, by the help of the mineral ferment, such as is caused by a bituminous substance. If we drop this alkaline solution into a glass of Bath-water, it soon grows milky. The oily, or inflammable principle thus set at liberty by the acid, regales the nostrils with a rotten sulphureous smell. This experiment serves to prove the existence of an acid in the water. It serves also to prove, That Bath-water contains brimstone; for brimstone is nothing but the inflammable principle united with the vitriolic acid.

*Conclusion.* 1. FROM Dr. Lucas's own experiments, we have proven, That they were much better calculated to prove the existence of sulphur, than its non-existence.

2. FROM the sum-total we may venture to pronounce, That Bath-water contains,

1. The hot elementary fluid.
2. Air.
3. Spirit,
4. Iron,
5. Salts.
6. Sulphur.

## CHAP. V.

*Of Principles peculiar to Bristol Water.*

OF the volatile vitriolic acid of Bristol-waters, I have already spoken in that Chapter which treats of the Principles common to Bath and Bristol Water. There are particulars which fall under the cognizance of our senses.

1. To the *Taste*, Bristol water is particularly *Taste*. grateful, leaving a sense of stipticity on the palate.

2. To the *Smell*, it is inodorous.

*Smell.*

3. To the *Touch*, it is luke-warm. In summer 1744, the Earl of Macclesfield made experiments for forty days successively morning and evening. The scale of his Thermometer divided the distance from the freezing point to the boiling, into 100 parts. The degrees were divided into parts of degrees. During the whole, the difference never rose or fell a full degree. So that  $24 \frac{5}{8}$  of his Lordship's scale (the medium of his observations) corresponds to 76 degrees of *Fahrenheit's*.

*Touch.*

In July 1751, Dr. Davis, late of Bath, made repeated experiments with *Fahrenheit's*, and found the mercury rise between 76 and 77 degrees. The season was remarkably cold and rainy, and yet the heat was not sensibly less the day after the water was fouled by excessive showers and land-floods.

These trials stand recorded, and may be seen in a book now in the possession of the sub-tenants.

June 24, 1761, the heat of the water raised Fahrenheit's Thermometer at the cock to  $76 \frac{1}{2}$ , then 3 degrees higher than the external air.

That

That very day the Thermometer was immersed in water as it issued from the pump of a well of common spring water belonging to the neighbouring Rock-house. The quicksilver rose to  $56\frac{1}{2}$  only. On December the first, the coldest day of this winter, Mr. Renaudet, surgeon, made a trial of the heat by Fahrenheit's Thermometer. In his own bed-chamber, without fire, the mercury sunk, at 9 *A. M.* to  $35\frac{1}{2}$ . At 3 *P. M.* it rose to 38. He then immersed the instrument into one of the drinking glasses at the Hot-Well pump. It raised the quicksilver to  $76\frac{1}{8}$ . So that Bristol water appears to be only  $\frac{3}{8}$  of a degree less warm on the coldest day in winter, than it was on the hottest day of summer. This trifling difference may perhaps be owing to the action of the cold external air on that part of the plate which is not immersed in the water. Hence we learn, that Bristol water is warmer than common spring water by 20 degrees, and 20 degrees below the heat of the human blood in a healthy state.

*Weight.*

4. Weighed, it is of the same specific gravity with distilled water.

It loses only a portion of that elastic air which evaporates before the bottles can be corked. It contains neither animal, vegetable, nor sulphureous particles; so that it may truly be said to be void of the seeds of corruption. Thus it acquires no foulness, nor putrid smell, as most other waters do.

*No iron.*

5. WITH *Vegetable Astringents*, Bristol-water produces no other change of colour than with distilled water.

6. To distilled water in which *Salt of Iron* has been dissolved, and Tincture of galls, the purple colour is immediately produced.

These



These waters stain not linnen with what we call *iron moulds*; nor is there the least appearance of that yellow oker that lines the reservoirs of Iron waters.

Hence may we pronounce that Bristol-water contains no principle of *Iron* fixed or volatile.

Of the volatile principles of Bristol water we have spoken at large, in that Chapter which treats of Principles common to Bath and Bristol Waters. To its fixed Principles we now proceed.

7. Thirty pints of Bristol water were poured *Salis.* into a glass Retort, placed in a sand-heat in Mr. Morgan's Elaboratory. Common spring water was poured into another glass retort placed in the same sand. Neither were brought to the degree of boiling; they evaporated by gentle steaming. In the retort filled with Bristol-water there arose a pellicle, which did not appear in the other. The water continued white or transparent, till the whole was evaporated. The residuum weighed 90 grains. The salts being dissolved, there remained one half of an earthy matter.

8. The *Salt* slightly confined in a Florence flask attracted moisture, a proof of its being of the alkaline nature of common esculent sea-salt. Exposed to the air, it increases in weight, and grows white, or mealy.

9. Viewed in a microscope, this salt exhibited the form of Sea-salt, and calcarious, or muratic, the alkaline Nitre of Egypt, the *Natrum Egyptiacum*, or *Sal Murale*, of the antients. This salt is not purgative, as the salt of most mineral waters are. It is of a strengthening nature. The quantity of this salt is small. Was it therefore extracted, and administered together with the waters, their virtues might be thus much improved.

Dr.

Dr. Keir pronounces it *Nitrous chiefly*. His principal arguments are drawn from the forms in which the crystals shoot. But this test is fallacious, as he candidly owns (page 26). He confesses that, upon a red-hot iron, it neither flamed nor smoked, nay, it continued fixed in the fire without any other alteration, but the total loss of its pellucidity, page 81.

10. Put on charcoal, and melted with a soldering pipe, it crepitated very little, and, after the crepitation was over, it melted like a fixed alkali. It blistered in a small degree, and continued in a soft state while in the fire, in a manner like *Borax*; with this difference, that it stained the poker like wax, which *Borax* does not. As the muriatic salt, or *Natrum* is a basis to that of *Borax*, no wonder that these appearances correspond. It does not swell into bubbles like *Alum*, nor does it emit a white flame like *Nitre*. Calcined with *Charcoal*, it imbibes the inflammable principle, and forms a *hepar sulphuris*.

11. Into a solution of this salt, pour a few drops of the solution of *Silver in Spirit of Nitre*. It instantly throws up light clouds, which fall in the form of white praecipitate.

12. The *Lixivium* of Bristol Salts causes no manner of alteration, or effervescence with Spirit of Vitriol.

13. Dropped into *Oleum Tartari per deliquium*, it caused a congelation, or a kind of petrefaction.

14. The same *Lixivium* changes the syrup of Violets into purple. A solution of *Borax* did the same.

*Earth.*

15. The *Earth* of Bristol Water (by calcination) gives lime, whence it has generally been taken for a calcarious earth, but that conclusion is vague. Soap-lees cause, it is true, no alteration. This indeed is a proof of lime, which

makes it a neutral, as lime renders the alkali a neutral to constitute the soap-lee. Dr. Keir supposes part of the lime-stone reduced into powder by the native acid spirit which pervades the caverns of the earth, and which corrodes it to a point of saturation. This he offers only as a conjecture, for (page 87) he says, It is not hence to be inferred that this water can be of the same nature with common lime-water, that it owes its heat to actual fire, or the igneous parts contained in lime-stone. Page 91, he gives up his corroded powder, and allows the fixed contents to be *Nitre*, *Marine-salt*, and *Calcareous Earth*.

17. This earth could not dissolve in fresh distilled water, or even in the acid of sea-salt. It caused an ebullition with acids, which seemed to confirm the opinion of lime. But there dissolved only one half in the aforesaid acid. The remainder put on the appearance of an indissoluble selenite.

18. The earthy part of Bristol water may be said to be a *Magnesia Alba*, made in nature's elaboratory, by the help of the universal vitriolic acid.

FROM the sum total of these Experiments, we *Conclusions* may rationally conclude,

1. That those who account Bristol water to be a mere elementary fluid, found their *ipse dixit* on ignorance, the parent of prejudice.

2. That those who have charged them with *Iron*, *Nitre*, *Alum*, *Sulphur*, *Chalk*, or *Lime*, have either ventured their opinions without experiments, or have erred in their analysis.

The component parts of Bristol Water are,

1. The tepid aqueous fluid.

2. Air.

P

3. Spirit.

3. Spirit.
4. Neutral Salt.
5. Absorbent Earth.

## C H A P. VI.

*Of the general Virtues of Bath and Bristol Waters.*

**F**ROM the experience of twenty years, Hoffman roundly declares "That certain springs, " at certain seasons, are frequented by men who " have written in an inelegant manner ; that their " manner of prescribing has been no less preposterous ; that theory is, at best, fallacious ; " that the practice of mineral waters can never " be ascertained without experiments joined to *Induction.* " experience."—Dr. Shaw recommends Lord Bacon's *Art of Induction*, as the only rational, scientific method of extending their practice. By this we are enabled to discover those laws, means, or actions, by which mineral waters exist, and produce their effects.

To bring this art of Induction to some sort of perfection, a previous knowledge of the nature and frame of the human body, the solids and fluids, the seats, causes, diagnostics, and prognostics of diseases, is indispensably necessary. Without this, no rational attempt can be made to determine the medicinal virtues or uses of mineral waters, so as to apply them properly to practice.

Bath and Bristol Waters have been analysed by numbers. Various, opposite, and inconsistent virtues have been assigned. They never yet have been rationally reconciled to those symptoms to which they are really adapted. Acute diseases fall



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fall under the province of simple, soft, sweet water, artificially heated. Such Baths may be prepared here, or any-where; and therefore fall not immediately under my subject. To adapt the virtues of mineral waters to particular diseases, it is necessary to comprehend general doctrines. This is Boerhaave's Aphoristical doctrine. On the subject of *Inflammation, Pain, Obstruction, &c.* he has so fully enlarged, that, generals once understood, particular disorders naturally appear.

Cachexy naturally falls under the province of natural medicated waters. Cachexy, thus, naturally becomes my theme. This imperfect work may, now and then, fall into the hands of men, in whose more accurate sight these chemical and physiological disquisitions may appear superfluous. In the eyes of such, I hope for forgiveness, if, for the sake of the many, I trespass on the patience of the few. The subject of Bath and Bristol Waters is still rude and uncultivated.

Following the bright example of that great restorer of physic it is my purpose, 1. To inquire into the general *Causes* of *Cachexy*. 2. Into the *Seats* of these *Causes*. 3. Into their *Diagnostics*. 4. Into their *Prognostics*; and, lastly, Into the *Cure* of the several kinds of *Cachexy*. By adapting the virtues of the several ingredients contained in the waters to these causes, distant practitioners can no longer wonder why patients labouring of inveterate ailments receive their cures at Bath and Bristol. To proceed.

In *Chronical Diseases*, there is room for deliberation. Celsus defines chronical diseases, *sub Diseases: quibus neque sanitas in propinquo est, neque exitium.* Cachexy he calls *Malus corporis habitus*. Chronical diseases generally take deep root before the patient complains. Sick people are not always tractable;

tractable; when danger seems to cease, they often forget the Doctor, and his prescriptions. For these and other reasons, the same Celsus thinks chronical diseases more difficult of cure than acute. Physicians have much better hopes of a *Peripneumony* than of a *Phtisis*.

*Causes of Cachexy.*

1. *Remote.*  
*Passions.*

I. The antients reckoned three causes of disease, *Remote*, *Praedisponent*, and *Proximate*.

1. THE *Passions* claim the first place. Of these I purpose to treat expressly in the last part of this work. Suffice it in general to say, that nothing so sensibly disturbs the actions of the solids and fluids. Their effects are evident, their manner of operation is hid from mortal eyes, and never, perhaps, may be fathomed. Anger, love, sadness, fear, shame, envy, and joy, all, in their turns, disturb the human frame.

*Study.*

2. DEEP Exercises of mind debilitate the nerves, consume the strength, destroy concoction, and hinder the secretions. Hence it is that the studious are subject to flatulence, hypochondriac disorders, palsy, and leanness.

*Poisons.*

3. POISONS, by reason of the celerity of their operation, claim the next place. These are vegetable, animal, and mineral. The first act immediately on the nerves of the stomach and intestines. The nature of animal poison is still unknown. The last operate also on the first passages. To this class we may refer various sorts of medicines, which produce the like symptoms, anxiety, sighing, convulsions, inflammations, and gangrene. Medicines, in general, if they are not wanted, certainly do harm; from this principle it was that Celsus damns the practice of frequent purgations. *Sed purgationes quoque, ut interdum necessariae, sic, frequenter adhibitae, periculum afferunt. Assuescit enim non ali corpus, et, ob hoc, infirmum erit, lib. i. cap. 3. p. 32.* Sudden evacuations

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cuations of all sorts, give rise to cachexies, or bring the best constitutions to be susceptible of every trifling liberty. Nature misled, athletics become valetudinarians; the small pipes collapse, the conduits of life dry up. Hippocrates observes, That it is dangerous suddenly to alter settled habits, or old customs, or to fly from one extreme to another. *Semel multum, aut repente vel evacuare, vel calefacere, vel refrigerare, aut alio quovis modo, movere periculosum.* In the space of eight hours, the chyle assimilates itself with the blood, so as to be no longer distinguishable. In those who rarely behold the rising sun, muscular motion languishes, the chyle is neither assimilated quickly nor perfectly. Cachexy becomes a necessary consequence. "Let the nimblest hunter stand idle in the stall, he soon plumps up, but every day he becomes more and more unfit for the field."

4. Of the different qualities and effects of *Air*. I purpose to speak in the fifth part of this work. He who seriously peruses that section, will hardly be surprized if he finds air productive of chronical disorders, especially in a climate so variable as this.

5. BESIDES the evident qualities of air, there *Effluvia*. are others not discoverable by the senses, morbid particles floating in the air. There are effluvia which arise from excrements, rotten vegetables, insects, and marshy grounds. There are subterranean salts, oils, and metals. There are morbid miasmata arising from small-pox, measles, and other infectious disorders, waisted thro' the air, and again multiplied in the human body. These morbid particles act on the surface of the body, in the ratio of the subtilty, celerity, motion, and figure of their particles. They even enter the blood; 1. By the first passages, together

ther with the saliva. 2. By the inhalant vessels of the skin; but, chiefly, 3. By the bibulous vessels of the lungs.—In time of peace, soldiers suffer from inactivity and intemperance. In time of war they are exposed to every cause productive of acute disorders, which (for want of necessary aids) generally terminate in chronic.—Long voyages produce chronical disorders. Rancid meat, mouldy bread, stinking water, and foul air added to acrid salts, corrode the small vessels, and produce those extravasations, which infest the skins of scorbutics.

*Suppressions.*

6. SUPPRESSIONS of natural evacuations produce chronical disorders. Retention of excrement produces wind, crudity, pains of the stomach and head; of urine, dropsy, anasarca, and fever; of perspiration, listlessness, cough, rheumatism, fever, and almost every disease; of the menses, consumption, vomiting, or spitting of blood, green sickness, hysterics, cachexy, hectic, &c.; of the haemorrhoids, asthma, hypo, pleurisy, and peripneumony. *Quando enim singula quae aderant, non revertantur, hinc sequitur corporis gravitas, pallor subinde repetens, venter flatibus repletus, oculi concavi, &c. says Aretaeus De causis & signis morbor. diuturnor. Lib. i. Cap. 16. p. 47.*

*Intropulsions.*

7. INTROPULSIONS of skin disorders produce symptoms more terrible.

*Diet.*

8. OF *Aliment* I purpose to speak in the last part. Suffice it here in general to observe, That excessive satiety and abstinence are both productive of chronical disorders.

*Watching.*

9. WATCHING hurts the nerves, hinders perspiration, relaxes the fibres, and corrodes the juices.

*Causes pre-disponent.*

II. THE *Effects* of remote causes are diminished or increased according to the nature of the body which they occupy.

I. WEAKLY



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1. WEAKLY PEOPLE are, in general, predis- *Infirm.*  
posed to disease, and e. c.

2. THE frame of the body disposes certain *Make of*  
bodies to certain diseases, e. g. Long necked *the body.*  
narrow chested people are liable to consumption.  
—Short necked to apoplexy.—Fat to asthma.

3. RIGID FIBRES quicken the circulation, *Rigidity.*  
increase heat, and thicken the blood. The body  
comes thus to be disposed to pleurisy, rheuma-  
tism, and inflammatory fevers.—Where, e. c. the  
serous part of the blood preponderates, and the  
secretions are deficient, cachexy, dropsy, oedema-  
tous swellings, intermittents, remittents, and  
nervous fevers, are the consequences.

4. DELICATE FRAMES are subject to hæmop- *Delicacy.*  
toes, and consumptions.

5. THIN watery blood produces scurvy, hæ- *Blood dis-*  
morrhages, dysenteries, and putrid diseases. *solved.*

6. As men succeed to their fathers fortunes, *Inherit-*  
so do they inherit their diseases. From a cer- *ance.*  
tain hereditary structure of the solids and fluids,  
the body is disposed to hysterics, stone, consump-  
tion, epilepsy, schrophula, rheumatism, gout,  
&c.

7. SOME diseases pave the way for others, as *Diseases*  
asthma for dropsy, colic for palsy, measles for *productive*  
consumption, &c. Particular parts once injur- *of diseases.*  
ed, are affected from the slightest cause. *Neque*  
*enim morbi derepente hominibus accidunt, sed paula-*  
*tim collecti consertim se produnt, says Hippocrates.*

8. DIFFERENT ages are subject to different *Age.*  
diseases. Infancy has its teething, red-gum,  
worms, rickets; youth its inflammations; old-  
age dropsy, asthma, obstructions, &c.

9. WOMEN are predisposed to green-sickness, *Women.*  
hysterics, nervous disorders, and violent affecti-  
ons of the mind.

*Proximate  
Causes.*

III. THE *Proximate Causes* of diseases are, it must be confessed, often past finding out. Experience has, however, established some general causes.

*Stagnations.*

1. STAGNATIONS of *Blood* produce inflammatory fevers; of *Serum*, spasms, dropsies, anasarcas, &c. of *Lymph*, glandular swellings; of the *Nervous juice*, vertigo's, apoplexies, and palsies.

*Plethory.*

2. PLETHORY distends the vascular system. Hence debility, heaviness, head-ach, dreams, difficulty of breathing, hysterics, hypochondriacs, polypous concretions, inflammatory fevers, &c.

*Intemperance.*

3. HIGH SAUCES, and fermented liquors give rise to cutaneous eruptions, rheumatism, gout, defluxions, colics, wasting, and hectic.—Acidities of the first passages give rise to belchings, anxiety, gripes, green stools, looseness, and constipation.

*Schirri.*

4. INTERNAL HARDNESSES, (by pressing on other parts) produce dropsies, asthmas, flatus's, and various other disorders, according to the part affected:

*Suppurations.*

5. INTERNAL SUPPURATIONS produce diseases inconquerable. Reabsorbed they infect the blood with putrid cacochymy. Hence hectic, night sweats, wasting, &c.

*Acute terminate in chronic.*

6. ACUTE DISEASES terminate in death, health, or in other diseases; in which last case they may be said to be ill-cured; though in many instances, it is not in the power of the most expert Physician to prevent it.

*Concretions.*

7. CONCRETIONS of all sorts produce chronical disorders. If the bile is stopped in its passage from the gall-bladder into the duodenum, it necessarily stagnates; while the thinner part is absorbed, the thicker inspissates, and produces chronical obstructions, jaundice, pain in the right

right hypochondre, difficulty of breathing, &c. Concretions in the kidneys produce racking pains, inflammation, vomiting, ulcers, bloody water, suppression of urine, &c. That unctuous smegma which oozes through the cuticular vessels, if it stagnates, inspissates, and produces steatomatous swellings.

8. THERE are spontaneous changes which neither can be seen, nor prevented; hence chronic disorders. Blood drawn from the arm of a healthy man separates into globules red and serous. If a man lies in a syncope for even a few minutes, his blood stagnates in the ventricles, sinus's, and auricles of the heart, pulmonary artery, sinus's of the brain and uterine vessels: hence palpitations, fixed pain, intermitting pulse, anxiety, difficulty of breathing, fainting, and death.

" This, no longer than last year, was the *Case*.  
 " unhappy fate of Captain Dorrel of the na-  
 " vy. Five years before, he fell into a syn-  
 " cope produced by watching, and hard du-  
 " ty. From that instant he laboured under the  
 " complaints above recited. His days were  
 " shortened by injudicious bleedings, which de-  
 " stroyed his *vis vitae*; he died cachectic."

9. FROM Worms nestling in the first passages, *Worms*. arise colic-pains, erratic-fevers, convulsions, false appetite, perforations and death.

" This two years ago, was the untimely fate *Case*.  
 " of Master Tyrrell, a promising young gentle-  
 " man, a scholar at Claverton school, near Bath.  
 " Called for, in a hurry, I found him feverish,  
 " with a fixed pain in his side. Having no rea-  
 " son to suspect worms; he was bled, and blis-  
 " tered on the part. Next day, I found the fe-  
 " ver uncommonly abated, the pain was equally  
 " intense, and fixed in the opposite side. From  
 " that

“ that hour, I treated the disorder as from  
 “ worms, nor was I mistaken ; for in a very  
 “ short time, I brought off two round worms five  
 “ or six inches long. By pursuing the same re-  
 “ gimen, I flattered myself with the hopes of  
 “ a complete cure. My hopes were vain ; for,  
 “ one morning, as I thought I had left him in  
 “ a fair way, a servant came galloping after,  
 “ with news that Master was dying. Hastening  
 “ back, I found him in a cold sweat, constant  
 “ faintings, pulse scarcely distinguishable. By  
 “ the help of cordials incessantly repeated, he  
 “ was kept alive for some hours. Surprized at  
 “ such uncommon appearances, I examined the  
 “ body, and found the abdomen greatly dis-  
 “ tended. On laying it open, there issued forth  
 “ an ash-coloured liquor, of the consistence of  
 “ water-gruel, some quarts in quantity. Intense  
 “ cold, intolerable stench, and precipitance pre-  
 “ vented my searching for the perforation thro’  
 “ which this liquor must have passed. In the  
 “ abdomen there were no worms, but in the  
 “ small guts there were six, as large as the for-  
 “ mer, and dead.”

*Accidents.*

10. ACCIDENTS give rise to chronical diseases. By bruises never divulged, children have been subject, all their lives, to convulsions and idiotism.—From vertebral distortions, incurable asthmas and palsies have been produced.

*Seat of  
 Cachexy.*

IV. FEVERISH DISORDERS, which terminate soon, and which proceed from contagion, have their *seats* in the fluids.—1. Fevers inflammatory and putrid have their seats in the red globules, in the serum, slow fevers, rheumatism, and gout; in the lymph, venereal, and other pestilential disorders, as appears by the tumefaction of the lymphatic glands ; in the nervous fluid, nervous fevers, effects of smells, and many poisons, such

as



as opium, nightshade, &c. This last is the most dangerous, because on this spirituous fluid bodily strength depends.

2. NERVOUS and membranous parts of the *Nerves and Membranes.* body appropriated to motion and sensation, are the seats of many diseases; the brain to epilepsy, madness, lethargy, apoplexy; the nerves to spasms, convulsions, tetanus, palpitations, convulsive asthmas, vomiting, hysterics, hypochondriacs, and palsy.

3. THE intestinal tube is more liable to disease *Guts.* than any other part of the body. This is composed of folds and windings; the circulation is here slow; this way goes air replete with morbid particles, as also meats of different and opposite natures; this is the passage for the saliva, pancreatic juice, both biles, with other humours and liquors fermentable. Here the fibrous part of the food suffers corruption. The intestinal tube is the seat of heartburn, anxiety, wind, spasms, colics, ilium, iliac passion, diarrhoea, dysentery, head-ach, and vertigo.

V. THE knowledge of *Diagnosics* is that branch *Diagnosics.* of pathology which treats of the specific nature, and difference of diseases resembling one another. Without this Physicians cannot form prognostics. They become the sport of apothecaries apprentices and nurses. As are the different colour, tenacity, acrimony, and fluidity of infarcted liquors, so are the different effects of cachexy, viz. whiteness of the skin, yellowish, paleness, lividness, redness; heaviness, palpitations, crude pale urine, and wasting. The change of the humors is best perceived where the vessels are most naked, as in the white of the eye, lips, inside of the mouth. To sum up the whole, the physician need only recollect what the patient was, and compare that picture with the present.

VI.

## HISTORY, ANALYSIS, and VIRTUES,

VI. PROGNOSTICS vary with the causes. Suppose, e. g. upon inquiry, I find that the present depraved habit of body arises from improper diet, I prognosticate a cure, because I reasonably expect it from a better. This is verified in the relief of garrisons besieged, as well as in cachectic sailors sent ashore to hospitals.—Suppose cachexy arise from defect of animal motion, I promise a cure, provided I can depend upon the patient's exchanging a life of sloth for activity.—Green-sick girls may easily be cured by drinking waters impregnated with *Iron-ore* and *Exercise*, provided they abstain from tea.—But suppose cachexy arise from the vice of some purulent or scirrhus viscus, the physician who sees farthest promises least.—Læsions of some viscera are more dangerous than those of others. Suppose, for example, vertigo, trembling, weakness of memory, or sleepiness joined to cachexy, the prognostic is apoplexy.—Suppose the patient breathes hard on the least motion, we have reason to suspect a collection of watery colluvies in the thorax, *inde pessima prognosis*.

*Duration.* Prognostics vary according to the duration of the disease. Diseases, at first, affect one viscus only; in time they contaminate all. *Quocirca* (says Aretaeus) *ab hac enascentes morbi inevitabiles sunt Hydrops, Phthisis, Colliquationes*.

*Age.* In forming prognostics, attention is to be paid to age.—Boys grow cachectic from devouring fruit; a purge, and a few astringents, set them again on their legs. Cachexies are not common to young people. Old people, be they never so sound, are daily bending toward some incurable ailment. *Senes juvenibus plerumque minus aegrotant; quicumque vero morbis diuturnis oboriuntur, cum iis frequentius intereunt*, says the divine old man, *Aphor. 39*.

No

No change can happen to the human body *Cause.* without some antecedent cause. This cause gradually operating, produces effects correspondent to its force. On the knowledge of these depends the prognostic art, on these depend our hopes and fears. We promise happy or unhappy events, 1. From cures performed in the same disease. 2. From observations made on the same patient. 3. From the present *vis vitae*, compared to the strength of the morbid cause.—The *vis vitae* is judged by the habit of body, sex, age, former way of life, country, time of disease, and present state of the functions animal, natural, and vital.—The *vis morbi* is judged by the malignity of the morbid cause, by the severity of the symptoms, time of the disease, seat of morbid causes, and method of cure. The more arguments there are which tend to the same point, the more certain the prognostic, and, e. c. By ballancing promising with unpromising symptoms, physicians guess at events. In general, in desperate cases, it is the duty of a prudent physician to intimate his fears to relations. Those who magnify small matters to enhance their skill, are a reproach to the profession.

VII. WHEN we take a survey of the human *Cure of* frame, we may well cry out with the Royal *Cachexy in* Psalmist, *Fearfully and wonderfully are we made!* *general.* From a variety of causes, the nerves are irritated. By this irritation, the nervous juice rushes in upon the fibres; thus the motion of solids and fluids comes to be accelerated; thus is their action increased. Hence superfluous humours are evacuated; hence their vicious quality corrected; hence stagnations dissolved; hence obstructions opened; hence diseases vanquished.—Ignorant of the circulation, and its *Nature.* mechanical powers, the ancients ascribed the whole

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whole business of medicine to nature. By nature, we understand those powers which are exerted without the help of man. In this sense, the common saying is truly verified. *Medicus minister, natura medicatrix*. But nature is not always all-sufficient. In many chronical diseases, e. g. *rickets, hysterics, p—x, &c.* nature makes no attempt; no cure is to be expected. In extravasations, e. g. stone, worms, collections of matter; nature's endeavours are not only insalutary, but destructive. Nature sometimes does good, sometimes harm. Diseases are not, therefore, blindly to be trusted to nature.

Art.

To supply the defects of nature, art is to be called. Weak attempts are to be assisted, tumultuous bridled, straying directed. This is the business of art. When, for the preservation of health, or the conquering of disease, nature points out something to be done, this we call *Indication*. Indication arises, 1. From a knowledge of proximate causes; 2. From experience; and, 3. From knowledge and experience united. Happy the patient, when these twin sisters travel hand in hand to the same goal! Protected by art, he has nothing to fear from temerity.

Art can effect nothing without instruments. The instruments of art are called *Remedies*. Artists, ignorant of the nature and powers of their instruments, deserve not the name. Medical instruments are three-fold, *Diet, Surgery, and Pharmacy*. Of the first I purpose to treat at large in the last part. The second falls not immediately under my subject. Medicines may be divided into *Alteratives, Strengtheners, Anodynes, and Specifics*. Such, in all respects, are *mineral waters* in general. Such are *Bath and Bristol waters* in particular. The powers of these waters continue to be obscured, 1. Because the  
 particular



particular circumstances of diseases are seldom accurately investigated. 2. Because the causes of many diseases which they cure are often hid from our eyes. 3. Because the principles on which the powers of the waters depend, are seldom subjected to mechanical, or chemical laws. 4. Because the administration of the waters is so confounded with shop-compositions, that physicians are often at a loss to know to what the effects are to be ascribed.

FROM a survey of the causes of Cachexy, we learn, 1. That the solids are restored by the fluids. If the fluids possess not qualities necessary for nutrition, the solids cannot be restored, When the humors come to be drained off by evacuations sensible or insensible, the body continues not to be nourished. *Practical inference*

2. *GUTTA corvat lapidem, non vi, sed saepe cadendo.* Just so it fares with the human frame; the fluids strike four thousand times in the space of one hour, against the sides of converging canals. The epidermis peels off, and grows again; we cut our nails, they grow again; so fares it with our hair. Parts of our solids pass off by spittle, urine, bile, and excrements; the solids daily perish.

3. In health, the urine is rather high-coloured, with a proper sediment. In cachectics, the urine is crude, and colourless. In weak circulations, insensible perspiration ceases; the skin becomes parched, nasty, and dry. What used to pass by the skin, now takes the road of the ureters; Hippocrates observes, that the body cannot be nourished, while the urine continues to be crude, thin, and watery. If it passes in quantity, the body wastes; if it stagnates, it produces a λευκον φλεγμα, or *dropsy*. In cachectics, muscular motion languishes, so does the force of the

the heart and arteries. The great veins have hardly strength to empty themselves, the third order of vessels can no longer resorb that lymph which the exhalant arteries pour forth. The *Tunica cellulosa* swells, oedema's arise, particularly in places most remote from the heart. Hence languor, and debility of pulse; hence palpitation and difficulty of breathing, as Aretaeus well observes, in his *Caus. et Sign. morb. diuturnor.* Such patients ought not to be purged, but strengthened.

*Origins of  
diseases  
simple.*

3. THE *Origins* of diseases are not so complex as commonly believed, neither is the method of cure. Boerhaave (in his *Academical Praelections*) was wont to observe, That there were many who despised the practice of the antients, because, in diseases differing in their symptoms, they applied the same, or similar remedies. Patients are affronted if they are confined to the same simple regimen. They think themselves well used if they meet with Doctors who ransack dispensatories, changing, compounding, and recompounding every hour, while far more surely and sooner they empty the pocket than the disease; *dum longe certius crumenam exhauriunt quam morbum.* Let those who despise simplicity of practice consider how many, and how different diseases have, for ages, been cured by the use of Baths and mineral waters. To these invalids are obliged to fly after having, to no purpose, tried nostrums the most extolled. *Considerent illi qui simplicitatem artis, in morbis chronicis, elato supercilio, contemnunt, quot et quam diversi morbi curentur Thermarum et Aquarum mineralium usu, per tot saecula, probato. Ad haec coguntur confingere aegri, decantatissima alia remedia experti, absque ullo fructu.*

5. FROM

5. FROM a consideration of the difference of causes which produce cachexy, it appears that different and opposite remedies are sometimes required. When the body is puffed up with viscid humors occasioned by the debility of the solids, strengthening medicines are the instruments. But, when attenuated humors pass off, and cannot be replaced by nourishment, when the vessels thus contract, and the sick waste, moistening and incrassating remedies are indicated.

Different diseases require different preparations. Girls bloated with pale inert mucose cachexy require *Iron* dissolved in vegetable acids, rather than *Iron* in substance; because filings may inviscate themselves in the mucus of the first passage, and thus avail but little. But if there are signs of a predominant acid, then let *Iron* be given in substance, because it not only blunts the acid acrimony; but, dissolved in this acid, it produces its effects.

6. Those disorders which arise from inflammatory lentor are increased by Bristol Water, and exasperated by Bath. Puitous lentor falls under the power of both. Humors transgress by excessive dilution, or by putrescency. For that flaccidity of solids induced by excessive dilution, we find filings of *Iron* successfully recommended. In dilution caused by putrescency, we find *Acids* successfully also recommended. When the body comes to be bloated with humors inert and phlegmatic, *Chalybeates* are indicated. Thus, in a word, Chronical disorders, in general, fall under the power of some or other of those principles which constitute mineral waters. For, *filings of Iron*, and *Oil of Vitriol* are only succedaneums to *mineral Waters*.

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Every mineral water differs in its principles. Some contain the elementary fluid only. Such have we named. If simple dilution is only required, these are the waters. If acids predominate, *Seltzer* waters are indicated. If the action of the solids is to be increased, *Spaw* and *Bath* waters inspire the very soul of *Iron* into pale languid carcasses, so does *Tunbridge*. If foul *Scurvy* predominates, *Scarborough* and *Cheltenham* conduce. In *Worms*, and *Itch*, *Harrogate* has done wonders. If *Scrophula* taints the blood, *Moffat-Wells* promise a cure.—In Consumptions arising from tubercles, or in cases where the aerial vessels are choaked, *Bristol's* penetrating salts have cleared the passages. Its *Absorbent Earth* has corrected that acrid humor which vellicates the nervous coat of the intestines. Thus has it stopped fluxes in which *Opiates* and *Astringents* have done mischief by stopping expectoration. Its native *Acid* has banished colliquative sweats, and quenched that thirst which is the constant attendant of the *Diabetes* particularly, and of fevers. The blood has thus again acquired its natural balsamic quality. Fresh lustre has sparkled in the eyes of patients doomed to death.

Thus far of Bath and Bristol Waters, in general. We now proceed to account for the virtues of their several principles; or, in other words, to apply them to practice.

I. AIR, *Its Virtues.*

*Air, its  
Virtues.*

FROM Experiment, Air appears to be in a state of compressure while it continues in water, so as, readily, to escape on the first opportunity. Hence, this air seems to exert a kind of struggling motion, so as to keep the watery particles



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ticles at a greater distance, or render the whole specifically lighter. Certain it is, the specific gravity of water appears to be considerably increased upon the avolation of the air, tho' the mineral spirit may still be left behind. Hence, may we infer that the use of air is to rarify the water, to render it more light and subtile, while it continues in its native form. This seems to be confirmed by experience. Water drank at the pump is lighter, flies up to the head, and distends the vessels.

The natural heat of the body, by rarifying this air, widens the passages, and renders it more subtile and penetrating; thus, by entering the smallest vessels, it opens obstructions, and cleanses the smallest canals.

The elastic quality of air may be the cause of that quickness, briskness, and taste, commonly observed in waters drank at the pump.

Lord Bacon judges that the best water, for domestic uses, which evaporates fastest over the fire. Hippocrates supposes that to be the best, for the same purposes, which soonest heats and cools.

Pyrmont waters often break the bottles, especially when they are set near the fire, or filled up to the top. For this reason, it is usual to let the bottles stand a little before corking, that a portion of the air may escape. A little space ought also to be left for the air, at the top. For, nothing spoils liquors so much as common air. Wines, in casks half empty, grow vapid. Mineral waters become sluggish, and indolent.

Mineral waters ought to be drank early in the morning, because the external heat, by increasing the internal motion, dissipates their elastic parts. "Dr. Shaw remarks (of Scarborough water. p. 143) that, tho' it retains its purgative quality after the air is gone; yet, it seems

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" nor

“not to pass so far into the habit of the body, nor does it produce all its effects, as when drank fresh.” In some cases, it is however more adviseable to drink it at a distance, especially where the viscera are unsound. This caution is particularly necessary, in respect of Bath Waters.

## II. SPIRIT, *its Virtues.*

*Spirit, its  
Virtues.*

THE SPIRIT of Waters (by experiments ad-duced) is allowed to consist of iron subtilized. By mineral spirit we understand an elastic fluid blended with the sulphureous parts of minerals, and which pervades the bowels of the earth, so as to become the animating principle of mineral waters. This is the doctrine of Boyle, Hoffman, Becher, Lister, &c.

As for the virtues of the other principles, we can account no otherwise than by examining the substances of which they are found to consist; so, for the virtues of the *Spirit*, we consequently have recourse to the known properties of iron. The irony particles found in Bath waters, bear, it is true, but a small proportion, in point of saturation, to the common shop-compositions. *Natural* ferrugineous waters are, for this very reason, preferable to shop tinctures or solutions, just as far as the works of almighty chemistry exceed imperfect artificial discoveries.

The medicinal virtues of *Spirit*, or, in other words, iron subtilised, are allowed to be de-obstruent, and strengthening. To this spirit it is owing, that the waters do not cool or weaken the body, but rather heat, and invigorate; so as to increase the appetite, raise the pulse, and give a rosy colour to the cheeks. This is the  
princi-

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principle that causes them to pass so nimbly, open obstructions, and throw off peccant humors. When this principle comes to be lost, (as has indeed happened to many springs,) the most celebrated mineral waters lose their credit, and sink to the condition of common water. Thus far, of the Spirit; we now proceed to the virtues of iron substantially found in Bath Waters.

### III. IRON, *its Virtues.*

IRON is absorbent, it ferments with acids, and blunts them to such a degree as to render them imperceptible. This fermentation increases according to the quantity of the ore, and the degree of acidity. Filings of iron taken into the stomach occasion belchings, like those caused by sulphureous waters. When the stomach does not abound with acidity, they dissolve not easily, but clog the stomach. They ought therefore to be mixed with Rhenish wine. All the solutions of iron are strongly styptic. With infusions of most astringents, it turns black as ink.

*Iron, its  
Virtues.*

Salt of iron coagulates the serum of new drawn blood. This is not to be used as an argument against its use; for, in persons who have taken chalybeates for some time, we observe their excrements black; and, on dissection, we have observed the *Tunica villosa*, in the same manner, changed to black, but no alteration in the *Laeteals*, or any way beyond the *Primae Viae*. Hence may we infer, that it does not enter the blood, but seems to undergo a precipitation in the first passages, by which it is considerably deprived of its astringency. This change is not proper to iron alone, it is common also to most astringents. Its astringency

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is distinguishable by its taste; it always occasions a nausea, sometimes a vomiting. Hence we learn its stimulus, which is greatly increased by its weight. Its corroborating quality is, not a little, increased by the belchings which it occasions; for, thereby it either generates, or rarefies the air, which communicates an elastic force to our solids, whereby they are assisted in their functions.

In practice, iron is preferable to steel, as it is to all other metals. Its absorbency, astringency, and stimulant, are easily demonstrated. It is also attenuant, and aperient. It is therefore useful in all disorders which take their rise from acidity in the first passages, such as *Hypochondriac* and *Hysteric Cachexy*, *Quartan Agues*, *Dropsies*, *Worms*, *Obstructions of the Menstrues*, and *Immoderate discharges*, *Faundice*, *Fluor Albus*, *Diarrhaeas*, and *Haemorrhages*. In chronic disorders, it is the sheet-anchor.

Every corner of the island abounds with chalybeate-waters vulgarly and improperly so called; for, on examination, we find that such waters contain a very fine *crocus* of iron-ore suspended in the watry fluid. This is none other than that yellow oker which paints the sides of our Baths of a yellowish hue, and which dyes the rills which flow from such springs. Ferrugineous waters are nature's productions, more subtle, homogeneous, and safe, than artificial productions tortured thro' fire, or altered by the interposition of corrosive menstruums. Hence there arises a question, Whether the softest *Oker*, or *Minera ferri*, found in the course of some mineral springs, may not be capable of affording better chalybeate medicines than those usually ordered in Dispensatories? Be this as it will, we may venture to affirm, That where chalybeates



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beates are indicated, next to Mineral Waters, iron, in substance, is preferable to every human preparation.

### IV. SALTS, *their Virtues.*

SALTS comprehend that class of minerals *Salts, their Virtues.* which melts with heat, turns solid, hard, and friable with cold, is soluble in water; by evaporation, may again be reduced to their original form; and are generally pellucid and pungent to the taste. Water frozen puts on the form of a salt. Boerhaave, in his chemical lectures, was wont to say, that it differed only from salt in its insipid property, and its facility in dissolving.

There are various salts, *Marin, Gemm, Commun, Glauber. Ammon. Nitr. Alumen. Borax, Viriolic, &c.* In that chapter which treats *Of the Contents of Bath Water*, we have discovered a salt of the nature of *Borax*, and a *Marine*. In that Chapter which treats *Of the Contents of Bristol-Water*, we have discovered the *alkaline basis of sea salt*. Both waters partake of the *Universal Viriolic Acid*. To the virtues of these my present researches are chiefly confined.

Most Salts are comprehended under the two general heads of *Sal Marin, Sal Gemm, or Sal Fossile*. The first comprehends all sorts of sea salts, however extracted, the second all those dug out of the earth; and, because some imagine that the sea derives its taste from the latter, we begin with that.

*Sal Gemmae* is a white hard pellucid crystal- *Sal-Gem.* line substance, of a more acrid penetrating taste than common salt produced from mines, the most noted of which are those in *Poland* and *Catalonia*. The former have been open ever

since the year 1252; some say they are 180 fathoms deep. Such quantities have been dug up as to leave a cavern which admits of spacious streets, and regular buildings, sufficient to contain a little common wealth which never sees the sun.

*Sea-salt.*

Sal Commune Maris consists of white cubical crystals not so solid as the former, tho' resembling it greatly in taste, not quite so penetrating, rather a little bituminous. This salt is extracted from sea-water by evaporation, with a mixture of animal substance. Rohault's *Physics* explain the method. There are salt lakes which yield salt in the same manner. Sal Marin, and Sal Gemmae dissolve in the same quantity of water; in distillation, they afford the same acid; either makes a menstruum for gold. They effervesce neither with acids nor alkalies. Warm water dissolves no more sea salt than cold.

Their virtues are the same. They heat, dry, cause thirst, increase the circulation, strengthen the solids, attenuate the fluids, quicken the appetite, promote urine, and perspiration, prevent putrefaction, and, if given in quantity, open the belly. They enter the lacteals, and take the whole round of circulation. Mixed with the blood, they prevent its coagulation, nor are they to be altered by any of its functions, but pass off plentifully by urine, as the taste may discover.

*Borax.*

BORAX is a white crystalline salt, in colour much resembling alum, in smaller oblong pieces, of a penetrating nitro-saline urinous taste, without stipticity or smell. It is easily dissolved by fire, hardly by air. It is now universally agreed to be a native mineral salt extracted from its proper ore, brought hither in pieces of a greyish colour, clammy or greasy to the touch, found

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found in the mountains of *White Tartary*, and in some places of *Persia*.

As far as its virtues have been discovered, it may be said to be aperient, stimulant, and attenuant, particularly useful in promoting the lochia, menses, and urine. Mixed with blood it dilutes it, and seems to volatize the fluids. Its spirit discovers neither acidity nor alkalescency, nor can an acid be got from it by distillation, according to Lemery, *Memoirs de l'Acad.* 1728 and 29.

VITRIOL is a saline metallic substance composed of an acid and a metal. This acid, when it meets with an earth, makes an alum; when it meets with a metal, it corrodes it, and forms vitriol. *Vitriol.*

Their virtues are styptic and astringent. By strengthening the fibres, they prove diuretic, are very nauseous, and so emetic. Being too rigid to circulate thro' the vessels of worms, they destroy them. They cicatrize more powerfully than alum. Quercetanus was so bewitched with vitriol, that he believed it contained the virtues of the whole Pharmacopoeia. Our subject leads us only so far as it claims in natural dilution.

GREEN VITRIOL is produced by the mixture of an acid sulphureous spirit with an iron substance. Most mineral waters contain a quantity of iron matter; when therefore the subtile universal acid sulphureous exhalations, in rising up, meet with iron particles, they unite themselves thereto, and thus produce a vitriolic principle, of a texture proportionable to the union. All the simple as well as fermented vegetable acids mix naturally and kindly with Bath and Bristol waters. This vitriolic principle is the medium which keeps the other principles

## HISTORY, ANALYSIS, and VIRTUES,

ciples united, that powerful instrument, without which all the rest were effete. This Acid it is that subdues that hydra of a fever which, in many diseases, expends the natural nourishment in unnatural secretions. Acids have, in all ages, been used as *Antiseptics*. Late experiments have only corroborated what antient experience had discovered.

Oxycrate was the *Panacea* of Hippocrates. In his Commentaries on this divine author, Dr. Glas inculcates the use of *Vinegar*. Boerhaave (*De morbis ex alcalino spontanea*) says, *Curatio perficitur alimentis potibusve acescentibus, vel jam acidis, sapis acetosis*.---In the *Confluent Small-Pox*, Sydenham acidulated the drink with Spirit of Vitriol.---Mead (in the *Confluent Small-Pox*) says, *Ex hoc genere praestantissima sunt Cortex Peruvianus, Alumen, et Spiritus, qui Oleum dicitur Vitrioli*.---At one time, the *Malignant putrid Fever* employed the pens of *Huxham* and *Pringle*, Physicians signal for medical sagacity. Without personal knowledge, or correspondence, they hardly differ in history, cause, or cure; a manifest proof that nature appears the same, in every age, to those who rationally trace her paths. In the eyes of both, *Acids* are the true *Antiseptics*.

Dr. Pringle made several experiments to ascertain the antiseptic quality of *Salts*. After having shewn that alkaline salts do not promote putrefaction, he proceeds (page 376, Edit. 1.) to examine other salts, and, by comparing them with the standard Sea-salt, of all, the weakest Antiseptic, he found the ratio as follows,

|                    |         |     |
|--------------------|---------|-----|
| Sea-salt           | - - - - | 1   |
| Sal Gemmae         | - - -   | 1 + |
| Tartar vitriolated | - -     | 2   |

Crude



|                 |       |      |
|-----------------|-------|------|
| Crude Sal Ammon | —     | 3    |
| Nitre           | — — — | 4 +  |
| Borax           | — — — | 12 + |
| Alum            | — — — | 30 + |

V. EARTHS, *their Virtues.*

IN different arts, *Earth* has different accep- *Earth,*  
 tations. Earth, in the chemical language, de- *their Vir-*  
 notes a substance which every simple affords, *tues.*  
 dissoluble neither by fire nor water. Earths  
 mixed with water, separate, turn soft, are some-  
 times suspended in it, then again fall down like  
 mud, leaving the water clear, without commu-  
 nicating any tincture. These are called *Argil-*  
*lae*. There is another species of Earth, which,  
 put into water, neither crumbles nor precipi-  
 tates; and, tho' they imbibe a considerable  
 quantity of it, yet they still retain their former  
 figure and consistence. These are the *Cretaceae*.

The former are moderately astringent and  
 drying. They blunt acrimony, absorb humi-  
 dity; with acids, they acquire a sort of vitrio-  
 lic quality; hence they strengthen lax intestines,  
 restore the tone of the fibres, and thus avail in  
 many diseases of the first passages. Their alexi-  
 pharmic quality is a creature of fancy; nor are  
 they of any other use in malignant fevers than  
 by inviscating, or sheathing acrid particles, not  
 even the boasted *Boles* of the shops; for they  
 enter not the lacteals. The *Terrae Lemniae*, *Si-*  
*lesiacae*, *Melitae*, *Lignicenses*, &c. are much com-  
 mended by Dioscorides for virtues which we  
 have great reason to suspect. Common clay,  
 or Fullers earth, freed from sand, afford an  
 acid spirit, and may claim the same virtues.

The *Cretaceae* are antacid and absorbent. This  
 explains all their effects. They are useful in all  
 dis-

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diseases arising from the corroding acrimony of humors the in first passages, or laxity of fibres. By their absorbent quality, they destroy acids; and, with them, turn either to a vitriolic or aluminous nature; hence commended in *Heart-burns, Diarrhæas, &c.* Experiments demonstrate this; for we see them effervesce with acids. Mixed with stale beer, it becomes sweet. If the hops are overcome by acids, chalk restores the bitterness, but turns vapid if not soon used. Chalk calcined affords a *calx viva*, that of the Dispensatory. Tournefort affirms that chalk heats water, I never made the Experiment.

VI. SULPHUR, *its Virtues.*

*Sulphur.*

SULPHUR is a mineral fusible in a small degree of heat, volatile in a stronger, inflammable, emits a blue flame, and a suffocating vapor. Sulphur opens the belly, and promotes insensible perspiration; it passes thro' the whole habit, and manifestly transpires through the pores, as appears from the sulphureous smell of patients who use it, as also from tinging silver, in their pockets. It is a celebrated remedy in cutaneous disorders, internally and externally applied. It prevents the purulent diathesis of the blood. It is antiseptic, it prevents the intestinal motion of animal fluids, and fermentation of vegetables. It corrects saline acrimony, preserves the tone of the solids, and increases sweat, as well as perspiration. It contains most of the virtues of the Balsam of Gilead, it preserves the tone of the vessels without making them rigid or flexible. It promotes expectoration, and heals ulcers of the lungs. It is also an Anthelmintic. By the mixture of sulphur, mercury becomes inactive;

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tive; when antimonial or mercurial medicines exceed in operation, sulphur abates their violence; it checks the highest salivation, but, never ought to be administered in cases attended with inflammation. Arsenic is rendered almost innocent by mixture with sulphur. This we have seen confirmed by that Experiment made to discover the existence of sulphur in Bath waters. For, as we there observed, it is well known, that Arsenic will always attract sulphur, be the quantity never so small.

Hence we infer, That should a small proportion of arsenic adhere to the sulphur, it, possibly, may not, hence, receive any poisonous quality.

### VII. WATER, *its Virtues.*

NOR is the simplest water destitute of medicinal virtues. By its moisture, thinness, or rarefaction, it is wondrously serviceable in preserving and restoring health. It dissolves thick viscid humors, dilutes morbidic salts, and discharges coagulations.

*Water, its Virtues.*

The fountains at *Schlenfingen*, *Bebra* and *Osteroode*, contain no other principle than the simple fluid. They have nevertheless signalized their virtues in the *Stone*, *Gravel*, *Scurvy*, *Rheumatism*, &c. *St. Winifred's Well* in *Flintshire* is, of itself, a natural curiosity: without intermission, or variation, it raises above a hundred tons of water in a minute. This water is void of every mineral particle, tho' it rises in the midst of hills abounding with minerals. It possesses an uncommon portion of the *Spiritus Rector*, by some called *Spiritus Mundi*, or *Universalis*. The *Malvern Waters*, as I am told, are of this sort.

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The *Circulation* of the blood preserves the body from corruption. Animal juices prove corruptible in a state of warmth, rest and moisture. To preserve the circulation of balmy juices, it is necessary that the blood should be continually refreshed by an aereal, elastic, similar fluid. Water is agreeable to the animal juices. The blood contains two parts of serum to one of red globules. It contains besides an aereal, aethereal, subtile principle, manifestly appearing by its bubbling in *vacuo*. Nothing therefore can be so natural to the human frame, nothing can so well preserve life. Water divides viscous sily humours. It dilutes saline earthy scorbutic salts. These it discharges by the proper emunctories or outlets of the body.

There are springs hot and cold, says Hoffman, which (by the strictest examination) manifest not the least sign of mineral, and yet are highly valuable. The waters of *Toplitz* nearly resemble the *Piperine-springs* in *Rhetia*; they are extremely hot. Tho' they preserve their native purity mixed with acids, or alkalies; tho', on evaporation, they leave no solid substance behind, yet they have considerable virtues in disorders external, and internal. The *Schlangenbad* Springs of *Hesse* contain no saline, earthy, irony, or other mineral principle that art can extract. By drinking and bathing, they nevertheless perform surprising cures. The waters of *Wilbems-brun* throw up abundance of bubbles in *vacuo*; they neither grow thick, nor precipitate any thing on the addition of oil of *Tartar*, a solution of silver, or sugar of lead. They suffer no change from the common experiments of galls, acids, alkalies, &c. Most of the cold springs at Bath are hard. Dr. Lucas examined the water of the *Mill-spring* opposite to the *Hot-well*; he found

it



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it sparkle like the *Pouhon*. It loses none of its pellucidity on standing open for hours. It weighed one grain less than distilled water. With acids or alkalies, it gave very slight appearances, &c. On evaporation it only gave five grains of residuum to a pint. The virtues of such waters probably depend on their levity and subtilty. The purer perhaps the more powerful.

Water-drinkers are the most healthy, and long lived. Water is the best menstruum for dissolving aliment, extracting chyle, and carrying them through their proper canals. Water dissolves that viscous slime which lines the glandular coats of the stomach and duodenum. Nor is water inconsistent with fruit; for in *Spain*, *Portugal*, and *France*, water is the common beverage, and fruit the greatest part of diet. Water-drinkers are remarkable for white teeth; for rottenness of the teeth is caused by the scurvy, a disease prevented by the use of water. Water-drinkers are much brisker than those who indulge in fat ale, whose viscosity blunts the appetite, and hebetates the senses. Malt-liquors are fit only for men accustomed to labour or exercise. Persons of delicate constitutions and sedentary lives ought to accustom themselves to cold water, and wine.

Water not only prevents, but it cures diseases. Fevers are occasioned by an increased velocity of the fluids, and a rigidity of the solids. These create heat. Heat dissipates the thinnest part of the fluids. The remainder forms obstructions. The blood must be diluted, the heat and inflammation allayed, the stagnating juices propelled, and the morbid matter discharged. No medicine bids so fair for these purposes as water. By *ptisans* alone, Hippocrates

pocrates cured fevers in his days more judiciously and more certainly far than we with all our modern specifics. He was truly the minister of nature. We commit violence on nature every day.

Chronical diseases take their rise from obstructions, or foulness of the juices. By mineral waters, surprising cures are daily performed. Those cures are principally owing to the pure element. Numberless are the instances of waters performing cures when no vestige of mineral could be discovered.

*Cases.*

1. Dr. Baynard says, "I once knew a gentleman of plentiful fortune who fell into decay: while he was in the *King's Bench*, his wife and children lived on bread and water. Never did I see such a change. The children, who were always ailing and valetudinary in coughs, green sickness, King's-evil, &c. now looked fresh, well-coloured, and plump."

2. "He tells the story of *Alexander Selkirk*, who, from a leaky ship, was set on shore on the desolate island *Juan Fernandes*, where he lived four years, and four months; during which time he eat nothing but goats flesh, without bread or salt, and drank nothing but fair water. He told me, at the Bath, where I met him, that he was three times stronger than ever he had been. But, being taken up by the Duke and Dutchess Privateers of Bristol, and living on ship's provisions, his strength left him *crinitim*, like Sampson's hair; in one month's time, he had no more strength than another man."

*Conclusion.* To recount the virtues of the compound were to anticipate particular disquisitions with cases, or cures incontrovertible. From reason  
and

## Of BATH and BRISTOL WATERS.

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and experience I may venture, in general, to affirm That, where the disease is curable, where the Director knows his tools; and where the patient co-operates, Bath and Bristol waters are inferior to none.

How inelegant our preparations of iron compared to nature's solution in its own universal acid! Who can suspend  $\frac{1}{75}$  part of a grain of iron in a pint of water? How harsh our preparations of oil, spirit, or elixir of Vitriol, compared to nature's Vitriolic Acid? If we may thus expatiate on the particular virtues of separate ingredients, what may we not expect from the united efforts of *The ONE GREAT WHOLE*! How light in the balance are the labours of a Helmont, to the processes of *Almighty Chemistry*! When mineral waters purge, they occasion no loss of strength. When they pass by urine, they cause no strangury. When they promote perspiration, they occasion no fainting. Persons of all ages, sexes, and constitutions, drink mineral waters successfully. With F. Hoffman we may venture to pronounce, "Mineral Waters come, the nearest, in nature, to what has vainly been searched after, an *Universal Medicine*; nor can this be disputed, but by such as derive their arguments from ignorance, or indolence."

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PART

# PART III.

## DEDUCTIONS of DISEASES,

Adapted to the Principles of

## Bath and Bristol Waters.

With MEMORABLE CURES.

### CHAP. I.

#### *Of Diseases of the First Passage.*

*Preamble.*

**I**N the second part, I exhibited the principles of Bath and Bristol Waters. I accounted for the virtues of these principles. To extend the nature, and qualities of the waters, I adapted these virtues to the general causes of *Cachexy*.

Boerhaave was the first who reduced the Art of Physic to a rational aphoristical system. In his treatise, *De cognoscendis et curandis morbis*, he has selected the beauties of the antients, and reduced them into order. In his *Principia Medicinæ*, Dr. Home seems to have improved on Boerhaave; he has accurately painted histories of diseases, these he has disposed in order, and simplicity. Treading in their steps, it is my purpose,



purpose, 1. To lay down rational deductions of those diseases which, at this day, find relief at Bath or Bristol; and 2. To confirm those deductions by Histories, or Cures simply related, and accommodated to the meanest capacities. In this mirror, distant practitioners may be satisfied, in what cases, Bath and Bristol waters are indicated. Patients, by beholding similar cases, and cures, may be encouraged to fly to the same cities of refuge.

I. Of DEGLUTITION.

THE finger of the Almighty is fairly to be traced in every member of the human frame, in none more stupendously perhaps than in those organs which serve for *Deglutition*. Those operations which conspire to this great purpose are so various, manifold, and delicate, that nothing but almighty providence can account for the duration of so exquisite a machine during the period of life. If Deglutition is hurt, digestion, chylicification, and all the other animal functions cease. For want of sustenance, man starves and dies. “*Jam operosa fit arte deglutitio, tot conspirantes organorum adeo multiplicium & concurrentium actiones huc requiruntur, unde laeditur frequenter, varie; & scitur cur a cibo sicco areant, rigescant, nec deglutire plus valent fauces; Cur, perdit a uvula, deglutienti tussis, et suffocationis minae? Cur, fisso velo palatino, deglutienda per nares exitum moliantur? Velum mobile palati valvulae officio fungi narium respectu; & muscoli deprimentis, ratione pharyngis, inde quoque constat.* Boerhaav. *Institut. Med.* pag. 49.

R 2.

When

When the action of swallowing has defied the utmost researches of art, Bath-water has performed wonders. To facts I appeal.

Cases.

1. From Dr. Pierce we have the following facts. "Mr. Yarburgh a gentleman of 56, having (for many years) been subject to a difficulty in swallowing, liquids especially, came to Bath. He had consulted a variety of physicians, who, according to their idea of the disease, treated him all differently.

"He swallowed the waters with no small difficulty at first; but, by degrees, that obstacle was removed. He had his neck and stomach pumped in the Bath. He went away very much advantaged."

2. "Mrs. Kirby of *Bishops-Waltham*, aged 40, had (some years past) a scarlet fever; and, being put into a sweat, took cold, which brought on a defluxion of cold rheum, which had like to have suffocated her. From that time, she had a more than ordinary streightness, with some difficulty of swallowing. Two or three years after, having a violent hæmorrhage from both nostrils, which, by cold applications, was as often stopped; but in March 1693, falling a bleeding in the night, she was blooded to a great quantity, which brought on a thorough inability of deglutition. She could chew, and, with her tongue, thrust it back to the top of the gullet, but down it would not go without the help of her finger, which often she was obliged to do, for fear of starving.

"At first, she hardly could swallow the water by spoonfulls. Soon afterwards she drank half a pint at a draught, and three pints in the morning, and more. After a month's drinking I advised pumping her neck and throat. Af

"te

“ter six month’s stay, she went home so well  
 “(and continued so most part of the following  
 “winter) that she came again in summer 1695,  
 “drank and pumped as before with no small  
 “addition to her former benefit.”

From *Guidot’s Register* we have the following.

3. “Madam Philips of London (in a Palsy of  
 “the muscles of the throat) by bathing, and  
 “drinking, received great benefit.”

THE Stomach is liable to pain, indigestion, *Colics*.  
 vomiting, heart-burn, anxiety and various other  
 uneasinesses, arising from various causes. The  
 disorders of the first passages pass generally  
 under the denomination of *Colics*. My bu-  
 siness is only with those which fall under the  
 power of mineral water.

“Of those who drink waters on account of  
 “the weakness of the organs serving for nutri-  
 “tion, Baccius (*De Thermis* pag. 111) says,  
 “There are not a few who want corroborant  
 “baths. Of corroborant, or comforting wa-  
 “ters the common ratio is that, by a peculiar  
 “virtue, or, by equality of temperament, they  
 “may so confirm the nature of particular vis-  
 “cera that they may be enabled to reject su-  
 “perfluous humors; of this virtue are the wa-  
 “ters of *Grotta, Villa sub Luca &c.* Such we  
 “may pronounce the Bath waters.

“There are waters which have the property  
 “of exsuding phlegm, viscidities, and crudities  
 “of all sorts, such as the *Porretanae* which con-  
 “tain alum, and a little iron. The *Albulae* are  
 “noted Diuretics. Salt waters generally act by  
 “vomit. Those waters called *Atramentosa* vo-  
 “mit violently, such as that of the *Styx* in *Ar-*  
*cadia*, by which, it is said, that Alexander the  
 “Conqueror of the world was killed. There  
 “are other waters which stop vomiting and nau-

## DISEASES CURED

“ sea, iron waters especially. This is one cer-  
 “ tain property of the Bath waters. There are  
 “ acid waters, which quench thirst, such as the  
 “ Selter, and Bristol waters. In all debilities  
 “ of the Viscera the antients, above all other  
 “ things, recommended *Exercise*.”

In hot affections of the stomach the Antients  
 prescribed Baths gently cooling, of the iron kind.  
 Acid waters were also recommended internally,  
 and externally. In dry, desperate debilities  
 of the stomach, they used tepid baths of com-  
 mon soft water. In sighings, they ordered cold  
 water at meals. In *Cholera's* Galen ordered gly-  
 sters of salt water, drinking warm water. In  
 the *Passio Caeliaca*, and *lienteric* crude fluxes,  
 Celsus successfully recommended refrigerant iron  
 opening waters. The same were ordered in re-  
 dundancies of black bile, with saburration, and  
 arenation. For creating appetite the nitrous,  
 salt, and waters, such as the *Grotta* were recom-  
 mended. These, convalescents and women with  
 child approached safely. The same may be said  
 of the Bath waters, but more truly so of Bristol.

“ Per haec itaque quae communiter nutrito-  
 “ riis accommodata sunt remedia, facile Balnea  
 “ quae ventriculum juvant, inferemus, says Bac-  
 “ cius *De Thermiss* pag. 112. Corroborant enim,  
 “ ac frigida simul et sub callidae faciunt tem-  
 “ periei eadem balnea tam epotae, quam, in  
 “ balneis ebibitae, et quae ex ea ortum habent  
 “ affectiones, debilitatem, ac dolorem tollunt  
 “ ventriculi. Calidis vero harum partium intem-  
 “ peramentis succurrendum per balnea quae mo-  
 “ dice refrigerant, reprimantque, astrictoria fa-  
 “ cultate, ut, ex *Ferratis*, appositissima est *Fi-*  
 “ *cuncella* aqua in potibus, *Villa Lucae*, *Sanctae*  
 “ *Crucis ad Baias*.

“ Acidae



" Acidæ vero aquæ omni, id genus, calidæ  
 " intemperiæ propriæ, quales ad *Anticolum* in  
 " *Campania* &c.

" Ubi enim confirmata intemperies vicit hu-  
 " midum, sicca ac desperanda introducit ven-  
 " triculi tabes, aquis dulcibus temperatis con-  
 " sulendum, ac per Hydrolæi fots. Singultui  
 " vero per frigidam cibis superbibitam, ac te-  
 " pidam.

" Choleram vero sedant, in fine, *Ficuncellæ*,  
 " *Porretanæ*, *Villa Lucae* &c. nec minus *Clyste-*  
 " *res ex salsa*, auctore Galeno.

" *Subcutiles* aquas videtur probasse Celsus in  
 " *Cæliaca passione*, ac *Lienteriæ fluxibus* quibus  
 " *Grottae* potiones egregie medentur, et aliæ  
 " ex ferri natura, refrigerantes, astringentesque,  
 " vacuando, ut *Porretanæ*.

" Atra vero bile, in ventriculo vexatis, eae-  
 " dem consuluntur, cum Arenatione.

" Ad excitandam vero appetentiam nitratae  
 " faciunt et salsae, et acida privata facultate,  
 " quales *Grottae*, quae reconvalescentes etiam et  
 " praegnantes circa noxam appetere promittunt.  
 " Noxam vero e diverso *Caninae famis* voraci-  
 " tatem cōhibent *Cellenses* ebibitæ in *Helvetiis*."

The effects of warm bathing in disorders of  
 the viscera are to be seen in those chapters which  
 treat of artificial and natural Baths. Suffice it  
 here, in general, to observe, that in *Colics*, *Gripes*,  
*Atrophies*, *Cramps* and other internal disorders,  
 external fomentations avail more than internal.  
 We proceed to particular diseases, and particu-  
 lar Cases.

## II. Of DEPRAVED APPETITE,

1. "Dr. Pierce mentions the case of Sir Wil- *Cases.*  
 " liam Clark, Captain of Horse, who, (by colds  
 " and

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“ and other irregularities attending winters cam-  
 “ paigns) had wholly lost his *appetite*. He sup-  
 “ plied in drink what he was deficient in eating.  
 “ These brought on a *Cachexy*, he looked yel-  
 “ low in the face, reached in the morning, was  
 “ tired, fainty, and subject to a diarrhæa.

“ In this state he came to Bath April 1693.  
 “ Willing to be well, but hating to take phy-  
 “ sic, or even to drink the waters regularly, he  
 “ bathed sometimes, and drank sometimes, by  
 “ which he recovered wonderfully. His vomit-  
 “ ing ceased, his looseness stopt, he ate mut-  
 “ ton, and drank sack. His complexion clear-  
 “ ed, he returned to Flanders to his duty.”

2. “ Mr. Ellesby Minister of *Chiswick* came  
 “ down very faint, weak, and stomachless about  
 “ the middle of April 1690. Every thing that  
 “ he ate he threw up. He was withal in great  
 “ pain, he could neither sleep at night, nor sit  
 “ easy by day. He had the jaundice also.

“ He drank the waters for ten days, and  
 “ found no benefit. But, at length, the wa-  
 “ ters opened his body, which was always co-  
 “ stive, cleared the first passages, restored his  
 “ appetite, and abated his pains. He returned  
 “ in August, and, by that trial, was so much  
 “ mended that he whose voice could not be heard  
 “ a-cross a bed chamber, preached in our large  
 “ church with great applause.”

Dr. Baynard (speaking of Bath-waters) says  
 “ In *decayed stomachs*, and scorbutic *atrophies*,  
 “ and most diseases of the liver and spleen, I  
 “ hardly ever knew them fail.”

3. “ Madam B. a Lady of Quality loathed  
 “ every thing she smelt or saw, she was so weak  
 “ that she hardly could stand; she vomited up  
 “ every thing, she took little or no rest, her  
 “ pulse was hardly perceptible, her eyes sunk,  
 with

" with ructations, colic pains, hysteric fits, and  
" clammy sweats.

" When I first saw her, I considered her in  
" Lady Loyd's case exactly, when the vital  
" flame was blinking in the socket (by the cau-  
" tious use of Bath-waters, and Bitters) had a  
" new life put to lease.

" This lady was so very weak that at first I  
" gave her only two or three spoonfuls of wa-  
" ter, and about an hour after one spoonful of  
" bitter infusion, an hour after, a little more  
" water, then bitters, and so by degrees, I  
" brought her to bear half a pint hot from the  
" pump, which staid without loathing, or vo-  
" miting.

" She now began to bear the smell of meats,  
" she took a little chicken broth, then ate a  
" little meat; and, in the space of nine or ten  
" weeks, recovered so, that when she walked  
" in the *Grove*, she was pointed at, saying,  
" *There's the Lady who was so weak.*"

4. " A gentleman with a decayed stomach,  
" wan and pale look, staggering under a load  
" of nothing but skin and bone. From a strong  
" young man, wine, women and watching had  
" reduced him to a mere skeleton, he could not  
" swallow the least sustenance without vomit-  
" ing.

" By the use of the water, and temperance,  
" he came to his stomach; his flesh plumped,  
" his colour returned. In ten weeks, he was  
" as well as ever."

5. From Guidot's *Register* we have the follow-  
" ing. " Henry Owen of *Tbreadneedlestreet* trou-  
" bled with an indigestion, wind, obstruction of  
" urine, and tormenting pains of the bowels  
" came to Bath the second time, the first hav-  
" ing proved ineffectual, where he drank only  
" three

## DISEASES CURED

“ three pints for a week, and bathed fifteen  
 “ times in the Cross-bath, in which he drank  
 “ three pints of water, and received a cure. Af-  
 “ ter leaving off, he voided a great quantity of sa-  
 “ bulous matter for three months time by urine;  
 “ and now, from a thin consumptive, and de-  
 “ plored spectacle, he is become fleshy, of a  
 “ good countenance, and laudable healthy tem-  
 “ per. This account I had from his own  
 “ mouth, February 1686.”

*Hard  
 drinking.*

IN restoring the tone of stomachs destroyed  
 by hard drinking, Bath-water may truly be said  
 to be specific. It were superfluous to produce  
 Examples, the fact is well known.

## III. Of PAINS of the STOMACH.

*Stomach  
 acies.*

STOMACH PAINS have obtained various names,  
*Cardialgia, Attritio Ventriculi, Heart-burn* &c.  
 These are supposed to be caused by the action of  
 corrosive humors on that *plexus nervorum* which  
 covers the orifice of the stomach, and which  
 takes its rise from the *Par vagum*, or eight pair  
 of *Willis*.

*Cases.*

1. Ugulinus (*De Balneis Comitatus Pisarum*)  
 observes. “ Juvenis quidam stomachum debi-  
 “ lem habebat, et per ingestionem saepe liente-  
 “ rias habebat, corpore macilento haemorrhoi-  
 “ dibus afflicto. Hunc bene purgatum ad bal-  
 “ neum de *Villa Luccae* accedere jussi, et con-  
 “ valuit.”

2. “ Dominus Maltesta pessime dispositus erat  
 “ in nutritivis, per annos xiii fuerat vexatus a  
 “ fluxu stomachico, et fluxu hepatico; corpore  
 “ extenuato haemorrhoidas patiebatur, et ardo-  
 “ rem urinae; erat etiam podagricus. Caepi  
 “ ab aperativis quae statim profuerunt, postre-



"mo jussi ut balneum accederet, Medicis aliis  
"reclamantibus. Ivit et mire convaluit."

3. From Pierce we have the following *Cases*,  
and first of his own wife. "She had long been  
"subject to pains in her stomach, she had the  
"advice of all the Physicians who attended the  
"Court hither, and all to no purpose. She had  
"been naturally subject to a consumption, and  
"was worn out by pain.

"She began these waters at last, and went on  
"with that success, that, in a little time, she  
"began to be at ease, and was at length freed  
"from her pains; she recovered her lost appe-  
"tite, gathered flesh and strength, and conti-  
"nued free from her returns of pain longer  
"than after any course of physic she had taken  
"before. Whenever she found any bodings of  
"pain, she applied to the waters at any season,  
"and found her cure."

4. "Sir Willoughby Aston was violently  
"seized with this *Cardialgia*, and finding no  
"no relief in the country, he was hackney away  
"to *Tunbridge-wells* by an eminent physician of  
"London. These increased his pain so that he  
"seemed to be inwardly convulsed.

"He came into my house on the twelfth of  
"September 1690, his torture was so great that  
"he was forced to take anodynes, and that fre-  
"quently. Without any other preparation than  
"an anodyne the first night, he drank three  
"pints next morning, which, after a while,  
"was increased to two quarts, or more. In one  
"week he had manifest abatement of his pain,  
"and, in a month, was perfectly well."

5. "Sir James Rushot came to Bath in No-  
"vember 1760. Besides violent pains he com-  
"plained of sour corroding eructations, which  
"he compared to *vinegar*, *oil of vitriol*, and

"*aqua*

## DISEASES CURED

“ *aqua fortis*. Long had he been troubled with  
 “ it, and much had been done for it, all  
 “ to no purpose. He brought down directi-  
 “ ons and medicines with him from Town.  
 “ The waters passed well enough, he had some  
 “ degree of abatement of pain. After about  
 “ three weeks, they began to discharge quanti-  
 “ ties of adust choler by stool, which alarming  
 “ his family, they applied to me. I encour-  
 “ aged the flux, as by it, I found his com-  
 “ plaints abated. Thus he recovered.”

6. From Guidot's *Register* we have the follow-  
 ing. “ George Kelly of *Covent-Garden, Barber*,  
 “ aged 23, had been long afflicted, and almost  
 “ worn out by tormenting pains in his stomach  
 “ and guts, with a hectic fever.

“ He drank the waters fourteen days from  
 “ three pints to eight, and, at a fortnight's end,  
 “ received considerable benefit. He bathed  
 “ four times, and, in one month's time, was  
 “ perfectly restored.”

7. “ Eight, or nine years ago, Mr. Hone of  
 “ London, *Painter*, came down for *belching*,  
 “ *flatulency*, *indigestion*, and *total loss of appetite*.  
 “ By drinking the waters, his complaints va-  
 “ nished almost the very first week. He conti-  
 “ nued however to play with the waters five  
 “ weeks longer, returned well, and continues  
 “ to this day.”

8. “ Mr. Jackson of London, Irish Linnen-  
 “ Merchant, came down about the same time,  
 “ and with the same complaints, he found a  
 “ cure almost as soon.”

9. “ At the request of my worthy friend Dr.  
 “ Campbell of *Hereford*, I visited Mr. John  
 “ Campbell, surgeon, and man-midwife at *Sut-*  
 “ *ton near Chippenham*, aged seventy, of an ex-  
 “ cellent constitution, and regular life.

“ His

“ His Tunica albuginea, nails, and skin were  
“ yellow, so was his urine. He had been sub-  
“ ject to *Agues*. His Stomach had lost its di-  
“ gestive, and expulsive faculties. For a week,  
“ or two, his food lay quiet, and yet he had a  
“ stool almost regularly once a day. When his  
“ stomach was quite distended, he felt a sense of  
“ weight, pressure, and uneasiness for some  
“ days. These were succeeded by racking pain,  
“ violent reachings, and excessive shakings, or  
“ rather shiverings, which terminated in pro-  
“ found sleep. After the paroxysm, the yel-  
“ lowness, and itching was universal. The last  
“ continued, the rest disappeared in a few days.

“ I recommended the Bath-waters. His  
“ hopes, and wishes were for death. Much  
“ against his inclination, I forced him into my  
“ chaise, and conducted him to Bath. With-  
“ out preparation, I put him upon drinking  
“ the waters, first, in small quantities, gradu-  
“ ally increased. His intermissions were longer,  
“ his appetite, spirits, and hopes, increased.  
“ His paroxysms however returned.

“ Despairing of cure, and tired of life, he  
“ would go home at the end of six weeks. He  
“ drank the waters at home, a pint twice a day  
“ with forty drops of *Elix. Vitriol. acid*, always  
“ once, sometimes twice a day. The effects  
“ are extracted from his Letter of date Nov.  
“ 4. 1761. now before me.” “ For the first  
“ month, two or three severe attacks. My fits  
“ then abated, until they quite ceased. The  
“ universal itching continued for months. Now,  
“ I am well; my urine has been natural a great  
“ while. I have a very good appetite, which I  
“ check as you desired, I now and then venture  
“ on a wing, or breast of a fowl, I long for  
“ meat. My waters, and my drops, I conti-  
“ nue,

## DISEASES CURED

“ tinue, and resolve so to do (God willing)  
 “ through the winter. I have changed your  
 “ opening tincture for *Sal Absynth.* and *Mercur.*  
 “ *dulcis*, which are more agreeable. I have had  
 “ two severe bouts of purging. In other re-  
 “ spects I am as well as a man of my time of  
 “ life can be, for which, though you forced me  
 “ to my cure, be pleased (Worthiest Sir) to  
 “ accept of the thanks of your most obliged  
 “ humble Servant,

“ *John Campbell.*”

10. “ Miss Davies was sent down from Lon-  
 “ don for an acidity and pain in her stomach.  
 “ She found relief the very first week.—The  
 “ last four took not ten shillings worth of me-  
 “ dicine among them.”

11. The Reverend Mr. Simons of *Kent* de-  
 livered me the following history which he de-  
 sired should be published. “ About the mid-  
 “ dle of September 1760, I was first taken ill  
 “ with a pain in my bowels, and, in a day or  
 “ two, it became most excruciating. Nothing  
 “ passed through me; but, in a few days, these  
 “ symptoms were removed by the aid of medi-  
 “ cine. I remained however totally without  
 “ appetite, my digestion was extremely weak,  
 “ and I had, at times, great pain in my sto-  
 “ mach. By change of air, exercise, and me-  
 “ dicine, I got rid of my pain, but the want of  
 “ appetite, and digestion still remained, so that  
 “ I became much emaciated, and so weak that,  
 “ at times, I was like to faint away.

“ In December I came to Bath, and began to  
 “ drink the waters. The pain of my stomach  
 “ returned; I continued nevertheless to drink  
 “ them, and was taken with a violent vomit-  
 “ ing, which was relieved by medicine. I con-  
 “ tinued



“tinued the waters, and rode out in a chaise,  
“in which I was very ill.

“In a few days, my appetite returned, and  
“my pains left me, and returned no more. I  
“continued nevertheless to drink the waters  
“for six weeks at that time, and returned next  
“November to confirm my cure. I drink them  
“now, and (thanks to God and the waters) in  
“very good health.”

IV. *Of the BILIOUS COLIC.*

THE Bilious colic is a violent pain which begins with a fever that lasts a few hours. The bowels seem to be tied together, or pursed up and perforated as it were with a sharp-pointed instrument. The pain abates and comes on again. In the beginning the pain is not so certainly fixed in one place, nor the vomiting so frequent, the belly yields with less difficulty to purgatives. But, the more the pain increases, the more obstinately it fixes in one place, the vomiting returns the oftener, and the belly is more costive, till it generates at length into an *Iliac Passion*.

This disorder is distinguished from a fit of *Difference between a*  
the Stone by the following signs.

In the Stone, the pain is fixed in the kidney, *fit of the*  
and extends from thence along the ureter to *colic, and*  
the testicle. *that of the*  
*Stone.*

In the Colic, it shifts and straitens the belly, as if it was bound with a girdle.

In the Colic, the pain increases after eating.  
In the Stone, it rather abates.

The colic is more relieved by purging and vomiting than the Stone.

In

## DISEASES CURED

In the Stone, the urine is at first clear and thin, but afterwards lets fall a sediment, and afterwards gravel and small pieces of stone.

In the Colic, the urine is turbid from the beginning.

In *Disorders of the Intestines* Baccius declares the power of mineral waters, pag. 114. "Per-  
" tinent autem ad Intestinorum affectiones tam  
" jure potus quam balnei omnia quae paulo an-  
" te ad nutritionis instrumentorum tutelam ci-  
" tavimus. Galenus (De san. tuenda) inter de-  
" lectoria medicamenta, enumerat usum aqua-  
" rum sponte manantium, leniter evacuantium,  
" ad mesaraicarum obstructions, simulacque  
" corroborandum. Talis Plaga, et Juncaria ad  
" Baias quae excrementa abstergunt, aperiunt  
" obstructa, et refrigerant. Efficaciores aeneae,  
" Grottae imprimis, et Porretanae ex alumine,  
" et ferro nobiles *Albulae*.

" In *Dysentericis cruciatibus* revocant hodie  
" fere omnes de morte ad vitam *Aquae Salmaci-*  
" *dae*, fervanturque in longinquas regiones ad-  
" latae, toto anno, incorruptae. Harum antiqua  
" laus est a *salis* natura, attestante Cor. Celfo.  
" In *Dysentericis* muriam quam asperrimam sua-  
" det Temison. Muria (inquit Dioscorides) *Dy-*  
" *sentericis* infunditur, etiam si nomae intestina  
" corripiant. Eadem testatur Plinius, et etiam  
" Paulus dicens *Muria et portulacae succus dysen-*  
" *tericis* convenit. Notum in *Dysentericis* cu-  
" rari nonnullos harum potu in principiis, af-  
" fectu sciz. non admodum acri, nec cruento.  
" Porro, ubi nomae apparuerint, i. e. cum ma-  
" nifesta erosione, et purulentis excrementis, na-  
" turam significat tunc pus movere, ac con-  
" coctionem moliri, juvandamque abstersione,  
" et exsiccatione per has aquas. Memini hic  
" Romae Alex. Fortunatum medicum, pro ha-  
" rum

"rum aquarum penuria, Dioscoridis exemplo  
"donasse urinam humanam quam recentem, et  
"in clysteriis, et in potibus, idoneo successu,  
"quod, ea ratione non damnaverim.

"Caeterum plurimae, id genus, aquae ver-  
"mes ingeneratos enecant, extruduntque, max-  
"ime amarae omnes, acres, ac fortes, quales ex  
"atramenti materia in *Volaterrano* &c.

"Flatibus vero ex intimis intestinorum dis-  
"cutiendis, ut in *Colica* usu venit, ac in *Ilei*  
"cruciatibus, praedictarum potus non medi-  
"ce operantur, item clysteribus, torsione prae-  
"sertim infestante. Efficacissima *Aqua Aponi*,  
"*Asculanae*, *Lucanae*, *Caiae*, *Aquisgrani*, *Cellen-*  
"*ses* &c. bituminosae, falsa, omnes ubicunque  
"terrarum, pro calido fomite actuali, digerent-  
"tes, de discussoriae. Colicae Alexander Tral-  
"lianus exhibet Thermales aquas quae evacu-  
"ant, et calfaciunt et item Avicenna xvi. tertii.

"Sicca vero intemperiei, ut siccantia et cali-  
"da balnea improbantur, ita balneis dulcibus  
"utendum, et ex herbis emollientibus, hydro-  
"laeum, et oleum. Porro discussorii balnei  
"vice artificialia aliquando sufficimus ut Vapo-  
"rarii usus, atque olei, vel hydrolei, folio te-  
"pente, si faeces indurentur, vel sicca alvi in-  
"temperie pendeat dolor.

"Frigidis vero intemperiebus satis calorifica  
"faciunt, competenti usu."

1. From Dr. Pierce's *Bath Memoirs* we have the *Cases*.  
following *Cases*. "Mr. Collins Woolrich Apo-  
"thecary of *Shrewsbury*, was seized with tortur-  
"ing pains in the stomach, bowels, and back,  
"successively, for the space of ten hours, and  
"then ceased of a sudden. The next night it  
"began and ended as before, and so day after  
"day from six at night till four in the morning  
"from the ninth of September 1683, till May,  
S "when

## DISEASES CURED

“ when the warmth of the season kept off  
 “ the disorder till September following, when it  
 “ began as before, and so year after year (ex-  
 “ cepting 1686) for seven or eight months to-  
 “ gether, during which time he was necessitat-  
 “ ed to vomit about an hour and a half after eat-  
 “ ing constantly, his paroxysm continuing ten  
 “ hours, all which reduced him to great weak-  
 “ ness, languor and dispiritedness.

“ By Dr. Baynard’s advice and mine, he im-  
 “ mediately began the waters, for he had been  
 “ sufficiently prepared at home. After the sixth  
 “ morning he perceived a sudden and manifest  
 “ removal of a load from his stomach into his  
 “ lower bowels, and presently had a large dis-  
 “ charge by stool. From that day he had nei-  
 “ ther pains nor vomitings, yet he kept on drink-  
 “ ing the waters for a month at least.

“ He kept free from any return til 1691,  
 “ when finding some disposition to it, he re-  
 “ turned in *August*, and drank them with the  
 “ same success; for it returned not again till  
 “ September 1693, when he came hither again,  
 “ and was relieved the third time.

“ He hath been here the two past seasons for  
 “ prevention, and is resolved so to continue to  
 “ do as long as it pleases God to grant him  
 “ strength. This is the patient’s own account  
 “ delivered verbatim, this last season 1695.”

2. “ Captain Wilkinson of *Brewer-street, Agent*,  
 “ had, for many years, been a martyr to the  
 “ *stone* and *bilious colic*. After thorough trials  
 “ of all pretended *Solvents*, and emaciated by  
 “ incessant pain, he chearfully submitted to the  
 “ operation of *lithotomy*. When the stone was  
 “ extracted, he told the surgeon that he would  
 “ willingly submit to a second cutting, if, by  
 “ that, he could be cured of his colic. His  
 “ vomit



“ vomitings were then so incessant, that his stomach could keep nothing. In this condition he was transported to Bath; where, for some time, he threw up Bath Water, and every thing else. By degrees however the water prevailed. His stomach bore a little food, he gathered strength. His paroxysms continued however to return now and then as usual. The harbingers of the fit were tingling and involuntary motions of his knees. To these succeeded violent reachings and racking pains. Pills of opium he threw up as fast as he swallowed them. Visiting him one day in the fit, I enquired whether opiate glysters had ever been prescribed. To which he answered, no. A glyster of the common decoction with one ounce of the *Tincture of Asa fetida*, and forty drops of *Laudanum*, was immediately injected. In a quarter of an hour afterwards, he threw himself down on the bed, and slept for eight hours, awaking in heaven, as he called it. Twenty four hours after, the paroxysm returned with equal violence. The same glyster was injected, with the addition of twenty drops of laudanum. The same sleep and ease ensued. Twenty four hours after, the same symptoms returned; he begged for the same glyster, which procured not only the same cessation from pain, but a total cure. By perseverance in the waters, he recovered complexion, appetite, strength, and spirits, so that he lived for years a comfort to all who knew him.”

3. “ Lieutenant Matthews, of the ship of war *Duke*, delivered into my hands the following state of his case, drawn by Dr. Huxham of Plymouth, the physician who had attended him for twelve months and upwards.—

## DISEASES CURED

“ He hath long been subject to a variety of nervous disorders, great flatulence, costiveness, frequent pain, and very great acidity in the stomach. He hath lately had several very severe attacks of a *bilious colic*, with continual vomiting of sour phlegm, and vast quantity of yellow and very green bile, great distension of the belly, pain in his loins, and difficulty of urine commonly high coloured. He sleeps badly, hath very little appetite, and worse digestion.”—To which let me add, that he was so weak when he set out, that he was obliged to be lifted into his chaise.

“ By easy journeys he arrived much recruited by the change of air and exercise. Without preparation I prescribed the water in very small quantities. His sickness abated, his tremblings declined, his appetite increased, his sleep returned, his skin changed its yellow hue, he galloped on the *Downes* every day. During his two months course, of drinking and bathing, he had but few returns of his reachings or sickness, and these very tolerable. He now and then complained of heat, and restless nights, for which I ordered some doses of *nitre* and *testaceous powders*, which, bringing on a gentle diaphoresis, relieved him. He had been used to an opening pill, instead of which I advised him to eat half a dozen china oranges, every day, and to drink punch made of *Seville*, by which his body was kept soluble. Without the help of medicine, he grew plump and jolly, complaining now and then of flying pains in his joints. Finding that he had formerly been subject to the gout, I advised him to make haste home, if he chose to be laid up there rather than at Bath. Hardly had he been rested from his  
“ jour-

" journey, before he was attacked with a smart  
 " fit, which completed his cure."

### V. Of the HYSTERIC COLIC.

THE *Hysteric Colic* is rather a symptom of *Hysteric* the hysteric passion, than a particular disease. It is *Colic*. accompanied with violent pain about the *scrobiculum cordis*, and a discharge of green humors upwards, quick weak pulse, difficult respiration, great dejection, and sometimes delirium. This sort of colic is peculiar to hypochondriac men, as well as to hysteric women. It often terminates in a jaundice which goes off spontaneously.

From Pierce's Memoirs we have the following Cases. 1. " Mrs. Farier of *Norwich*, aged " thirty, was sorely afflicted with this sort of colic. She had tried variety of regimens, to " very little purpose. She had been sufficient- " ly vomited, and purged.

" I ordered her three pints of water at the " *King's* pump next morning. She enlarged " the quantity to four or five. When she was " costive, she had opening stomachic pills. After drinking some time, she bathed, had her " stomach pumped, and was at length sent " away so well that she continued free from violent pains all the following winter and spring. " She returned next summer nevertheless, to " confirm the health which she had got."

Many more instances of *Hysteric Colics* cured by water drinking and pumping might be produced, but, for brevity's sake, are omitted.

2. From Pierce's *Register* we have the following. " Edward Wyke of *Westminster*, a Gentle- " man much troubled with the *spleen* and *colic*, " came to Bath July 1688, so full of pain, and

## DISEASES CURED

“ so very weak that he went crooked He was  
 “ scorched with continual fever and thirst.

“ He drank the waters as much as he could  
 “ bear for many days. After one month, he  
 “ increased the quantity, and thus recovered,  
 “ for which he gave public thanks in the church  
 “ of St. Peter and Paul.”

## VI. Of the DRY BELLY-ACH.

*Dry Belly-  
 ach.*

*Descripti-  
 on.*

I. MEN in health are sometimes seized with an excruciating pain about the navel, which seems to bore as with an augre. The colour of the skin changes to pale, or yellow. After two or three fits, the *Deltoid* muscles vanish so that the humeral joint seems to be covered only with a skin, particularly that plump fleshy part of the hand which lies upon the first phalanx of the thumb. The whole muscular fabric decays; men in the vigor of life look like decrepid, lifeless, inactive old men; their arms hang by their sides like flails; nor do the legs answer their purposes. Sometimes the heel is first affected, with a sense, as it were, of cold water poured on the part, from which it flies up thro' the leg and thigh, fixing in the left side under the diaphragm, or in the stomach with vomiting, so that the patient sometimes falls into fits.

AEgineta seems to be the first who has described this disease, in his *Lib. iii. Cap. xviii. p. 31*. Senertus, Crato, Riverius, and others, take notice of it also. Franciscus Citesius Physician to the king of *France*, wrote a treatise expressly on it, by the name of *Dolor Colicus Piætonicus*, or the colic of the people of *Paictiers*. William Bull, a native of the *West Indies*, wrote his Inaugural Dissertation on this subject,

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ject; which he publicly defended at *Leyden* in the year 1734. With other treatises of the kind Haller collected this, and published them together at the *Hague*, A. de Haen. Medic. Hag-Batavi. *De Colica Pictonum* 1745.

IN the year 1738, Dr. Huxham published a *Huxham.* descriptive account of this disease, by the title of *Opusculum De Morbo Colico Damnoniorum.*

He enumerates all the former symptoms, with many new ones. "Perduravit Colica haec epidemica ab autumno ad ver sequens, vere autem vigente, sensim abiit." He says it chiefly raged among the poor who lived almost entirely on *apples* and *cyder*, of which there happened to be an uncommon quantity in the year 1724, so that the hogs were fed on apples.

These were also infected. "Sed et hoc etiam Porcorum genus male tulit pomorum ingluviem: contabuerunt omnes, et perierunt plurimi. Diuturnum cibi potusque pomosi usum dicam, an abusum, *causam fuisse* hujus morbe nullus dubito, quia neminem vidi eo correptum qui se his abstinerat." In his *oris morbi terminosi sunt quasi endemici et epidemici, omni fere autumno, ut olim cecinit Horatius,*

*Pomifero, grave tempus, anno.*

He imputes this colic to the *Tartar*, or essential acid salt of the *cyder*, as he does the *rheumatism*, *arthritis*, or *gout*. This last disease is no where so frequent among the common people, as in *Devonshire*, where their drink is *cyder* only. "Nec graviores penas luunt bibaces Germani vino tartareo ingurgitantes quam nostrates pomaceum avidè perpotantes. Ibi enim et hic Arthritis morbus est maxime communis: neque tot ulpian, etiam inter plebeculam *podagra* laborant, quot in Damnonia pro-

"vincia, ob Pomaceum notissima." By continual cyder drinking, he thinks this *Tartar* renders the blood and all the humors secreted from it acrid.

In his *Method of Cure*, he condemns *Bleeding*, from woful experience. How beautiful his confession! "Fateor equidem me cum antequam morbi naturam perspexeram, quibusdam sanguinis missionem imperasse; omnes enim in grave animi deliquium inciderunt." In pains of the back and joints he tried it, *infausto ut plurimum eventu; omnes fere paralytico affectu correpti vim prorsus motumque manuum perdiderunt.*

He repeats vomits, purges, and glysters, with opiates, sudorifics, diluents, plaisters, blisters and riding. What makes particularly to my purpose is his opinion of *Water* external and internal. "At ne sic quidem alvus respondet, totum abdomen foveri jubeo fomento emolliente. Hoc blando vapore abdominis integumenta penetrat, ac intestina ipsa demulcet, rigidas emollit fibras, easque nimis tensas relaxat. Mirandum plane successum saepe notavi ex applicatione hujusmodi R. Rad. Alb. Sen. Lin. &c. Affectus longe feliciores expectandi sunt, si aeger in *semicupium* demittatur ex iisdem paratum. Haud raro profecto vidi faevissimum paroxysmum *nephriticum* solo balnei usu derepente solutum, cum nec praelarga sanguinis missio, nec laudani doses vero profecissent hilum.

"Ad hunc morbum profligandum non solum primas vias purgare necesse est, diluenda est insuper sanguinis acrimonia falina. Inter diluentia *αγιστον μεν Τρωα*. Ex omnibus *Aquis* laudo *Pyrmontensem* aut *Spadanam*; haec siquidem principio praedita chalybeato, non tantum sales optime dissolvit, sed et crasim sanguinis

"guinis

“guinis firmat, ac fibrarum tonum roborat.  
 “Qui consensum intestina inter et cutim ob-  
 “servaverat, haud ita multum obstuperet vi-  
 “dendo tum colicos dolores, tum rheumatif-  
 “mos, post sudationem penitus fere sublato,  
 “pro tempore saltem; frequenter enim sudo-  
 “res sponte erumpentes hanc aegritudinem al-  
 “levabant admodum.” In confirmation of which  
 Baglivi (Cap. *De Colica*) says, “*Colica habitua-*  
 “*lis et endemica, a vino acido praesertim oriunda,*  
 “*solis sanatur sudoriferis, vespere tamen interpo-*  
 “*sito anodyno.*”

“Post sudationem diluentia, prae ceteris au-  
 “tem *Aqua ferruginea* purissima diu potanda,  
 “ut corruptae nimirum nova puraque materia  
 “admisceatur, ut debitus fervetur sanguinis  
 “fluor, et ejus corrigatur acrimonia.”

Had this judicious author been but as well acquainted with the principles and virtues of Bath-waters as he seems to be with reason, sagacity, and books, he would have found the thread of his labour often cut short. When he has perused the following cases, he will (I doubt not) be convinced that Bath-waters surpass far all the hopes which he judiciously places in these their succedaneums. I cannot however dismiss this *Opusculum* without recommending it to the perusal of those practitioners who (without thinking, or studying) give up chronical cases as incurable, when they baffle the trifling prescriptions of a common synopsis. Is it any wonder to see such mens incurables cured by *Ward*? Huxham candidly owns his ignorance, nay even his blunders. His errors led him to the true practice. From the writings of the antients, and his own experience, he has established a *Method of Cure* which nothing but the power of warm mineral waters can excel; and yet, what seems

## DISEASES CURED

seems strange indeed, though this little work has been published twenty three years, do we daily see patients afflicted with this very *Colic* whose cases, mistaken for gout, rheumatism, gravel, &c. have been treated in the antiphlogistic destructive regimen. After the regular torture of months, miserable cripples have been given up as bewitched or possessed. Bath water has now and then restored those whom art has done its utmost to destroy. At Bath, there are now under my care two glaring proofs of the doctrine.

In his *Praelectiones Academicæ*, Boerhaave every year exhausted the subject of the *Colica Pictonum*. His aphorisms are in every body's hands, and so are their commentaries, yet I now relate the case of an eminent merchant of *Amsterdam* often miserably afflicted with this disorder, Mr. *Cbruiksbanks*. "He always employed the best physicians of that opulent city; who, in spite of the precepts of their great master, not only interdicted opium; but, what is worse, bled and purged as if their patient had been a Flanders dray-horse. With life, and loss of almost every sense, he narrowly escaped, and once and again found his cure by healing *balsams*, *opiates*, and *Bath-water*. In *Holland*, he hardly ever recovered of a fit in six months. At Bath, he had one, which, by *balsams*, *opiates*, *fomentations*, *glysters*, *semicupia*, and *Bath-water*, I banished in ten days."

Dr. Hilary (in his *Diseases of the island of Barbadoes*) has treated this disease rationally. It is so endemial in the West-Indies, that it commonly passes by the name of *The West India-Colic*. Nor can it be strictly said to be owing to the excess of *Acids*; for, since the common

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mon introduction of weak four punch, this disorder has been much less frequent in those countries than when sweet and strong punch was the beverage. Nay, in colic fits, it has been the custom to drink a goblet of fresh lime juice.

What may be the primary cause of this disease, let him who understands the causes of *Palsies* tell. That it is occasioned by *metalline fumes*, practice daily convinces. Let us hearken to Boerhaave's academical praelections. "Frequentes habui occasiones mirabilem hunc morbum videndi, et licet non negem illum ab aliis causis nasci posse, tamen frequenter observavi in illis qui *plumbo fundendo, cerussam praeparando, terendo, &c.* operam dabant. Observavi hunc morbum frequentem in opulentis qui exquisitissima vina magno satis pretio redemerant in suos usus, forte plumbo edulcorata, uti novimus olim a fraudulentis *Oenopolis, in Germania factum esse.*"

Universal consent allows this *paralysis, paresis, remissio*, or lameness to proceed from a *metastasis*, or translation of morbid matter from the *Intestines*, or rather *Mesentery*, by the interposition of the nerves to the limbs. Aegineta's authority seems sufficient. "Nostris temporibus, colicus quidam dolor molestus fuit, ex quo imprimis superstites futuros artuum motus omnimodo privatio sequebatur, seu critica quadam ex profundo metastasi facta &c. In another place, he says, "Ex quo multis quidem in epilepsiam, aliis in paralyfin artuum, superstitie sensu, quibusdam in utrumque prolapsis. Eorum qui in *epilepsiam* inciderunt, plures perierunt. Ex illis vero qui in *paralyfin*, plures servati fuerunt; *tanquam in crisi causa transposita μεταστάσεως τῆς αἰτίας*, Cap. XLIII. p. 45 versa." This seems to countenance

## DISEASES CURED

tenance the opinion of those who maintain the conveyance of nourishment by the nerves, allowing the blood vessels to serve only for containing the stream that keeps the *Αυτοματον* in motion. Whether this paralysis proceeds from transposition of morbid matter, or from that wonderful susceptibility or sympathy of parts, seems yet undecided, nor can it well be determined. Sufficient it is for us to be instructed, that there are five pair of nerves arising from different places, and (after wonderful complications) distributed among the muscles which belong to the humerus, arms, wrist, and fingers. Sufficient it is for us to know that there is a nerve which communicates with these five, together with the nerves of the *small guts* and *mesentery*. Our bodies are, as it were, one sheet of nerves. Nerves form the very papillae which serve the purposes of taste at the point of our tongue, and of feeling to our fingers ends. Ignorants vainly place their hopes in local applications, while those who are versed in anatomy strike at the root. How beautiful that candid confession of that illustrious follower of nature Boerhaave! "Well do I remember where  
 " the opinions of the antients stood me in stead,  
 " and (with joy) do I confess, that sometimes  
 " have I cured palsies of the extremities, the  
 " consequences of that disorder called the *Colica Pictonum*, while I applied *frictions*, *aromatic plaisters* &c. to the abdomen alone." Sufficient it is for my purpose to know that when this disease has baffled Boerhaave, and other distant artists, Bath-waters have cured. I appeal to facts.

To Pierce's *Memoirs* are we obliged for the following Examples. 3

I. " The

1. "The Rev. Mr. Pilkinton of *Lincolnshire*,  
"aged 33, lived near the *fens*. After a fit of  
"the colic, he was crippled, and emaciated all  
"over, his hands hung like flails.

"I put him on a course of drinking. He  
"staid six or seven weeks, went away much  
"mended, returned next year, and compleated  
"his cure."

2. "Miss Kilblewhite, afterwards Lady  
"Kenrick, was violently pained in the bowels  
"and limbs, joints and musculous parts, so  
"tender that she could not bear to be touch-  
"ed. She had convulsions, and hysteric  
"fits. She was withal emaciated to a ske-  
"leton. She had gone through the *materia*  
"*medica* by the direction of the celebrated  
"*Willis*. With no little labour she was con-  
"veyed hither in a litter, positively against  
"the Doctor's opinion.

"She was dropped down into the Bath in a  
"kind of cradle. By the Bath, she found some  
"ease, but no strength or stomach. She was  
"therefore put upon drinking. She used *cha-*  
"*lybeates*, *antiscorbutics*, *cephalics*, *anodynes*, *cor-*  
"*dials*, and *hysterics*. She had ease by bath-  
"ing in the *Cross-Bath*, and drinking at the  
"*King's-bathing-pump*, but no strength till she  
"bathed in the *Queen's*, and *King's*. She  
"came three or four years following at first,  
"then at four years distance, and at six, bear-  
"ing children mean while. In her total ener-  
"vation, the optic nerves suffered with the rest,  
"but as her limbs came to be restored, so was  
"her sight strengthened."

3. "The Lady Marchioness *Normanby* was  
"sent hither in May 1688. From a bilious  
"colic, her hips, knees, ancles, feet, arms, and  
"fingers were contracted. When her joints  
"attempt-

“ attempted to be stretched out, she roared out  
 “ with pain. Her ancles were drawn inwards,  
 “ She began with drinking. After a fort-  
 “ night she was put into the *Cross-Bath*. She  
 “ had been used to opiates, which when we  
 “ dared to leave off, she began to get ground.  
 “ She suffered her legs to be laid streight, and  
 “ to be set upon her feet, her ancles turned  
 “ not out so much; she began to feed herself.  
 “ These little alterations were all we dared to  
 “ boast of after three months trial, at which  
 “ time (the season being hot, and therefore  
 “ unfit for bathing) her ladyship returned, ly-  
 “ ing on a bed in the coach.

“ After her return, she arrived to a confi-  
 “ derable pitch of health, strength, and active-  
 “ ness, to which I was an eye-witness the spring  
 “ following.”

“ It were tedious (adds the Doctor) to give  
 “ every case that I could instance on this head.  
 “ Let it suffice to name the persons, who found  
 “ cure in the same disorder, since there was but  
 “ little difference in their symptoms, and me-  
 “ thod of cure.”

4. “ Mrs. Beare of *Devonshire* received great  
 “ benefit, after four seasons.—Lord Thane  
 “ cured in three months.—Mr. Petit of *Reading*  
 “ cured.—From *Ireland* Sir William Da-  
 “ vis, Lord Chief Justice of Ireland, recovered  
 “ Sir William Tichborn recovered after several  
 “ trials. Sir John Cole recovered after several  
 “ trials. Alderman Best of Dublin. Captain  
 “ Harison.—From the isles of *Guernsey* and  
 “ *Jersey*, Madam Patriarch, after several sea-  
 “ sons, cured. Mrs. Martin had a remarkable  
 “ speedy cure. Peters, a Surgeon, *cum multis*  
 “ aliis.—From the *Caribee Islands*, Colonel  
 “ Hallet, Richard his brother, Mr. Bond, and  
 man



" many others for the same loss of limbs from  
" the *Dry belly ach* (as they call it) were here  
" relieved, if not perfectly restored."

Let us hearken to Baynard. " I have visit-  
" ed *Bath* for 36 years, and have seen wonder-  
" ful and most deplorable cases there cured,  
" and some in a very little time (where care  
" and caution has been observed) especially  
" in the *West India Gripes* and *Colics*, where a  
" *paralysis* has been general, and others with  
" arms, hands, and legs strangely contracted."

1. From Guidot's *Register* we have the fol-  
" lowing. " Peter Bonamy, Sub-dean of Guern-  
" sey, three years troubled with the *colic*, and  
" loss of limbs. There was a scorbutic taint  
" also, by which the skin was infested with  
" pustulous eruptions, the fingers contracted,  
" the internal muscular flesh of the thumb wast-  
" ed, with paleness, and languor.

" He used the temperate Baths for a month  
" at first with considerable relief, the second  
" season more, and, after four years absence,  
" he returned with an athletic habit of body."

2. " Moses Levermore Surgeon of *Nevis*,  
" afflicted with the *belly-ach* and *palsy*, by the  
" use of the *King's* and *Cross-Baths* received cure.  
" I saw him well in London 1688.—Elias Pome-  
" roy of *Devon*, had the same disease, and  
" same cure.

3. " The case of Miss Menzies of *Dumfries*  
" was as bad almost as any of the preceding,  
" with this singular particular. Every three  
" weeks she was taken with a colic fit which last-  
" ed ten or eleven days and nights, with rack-  
" ing pain. During this paroxysm she could  
" neither eat nor drink, she lulled her misery  
" with laudanum. Under Dr. Gilchrist's care  
" she had tried every regimen.

" Two

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“ Two or three days after she arrived at  
 “ Bath, her colic paroxysm came on. I advised  
 “ her the free use of laudanum, and nothing  
 “ else. Immediately after her fit, she began  
 “ the water which prevented the return of the  
 “ colic. She bathed also. This regimen she con-  
 “ tinued for five or six months with great ad-  
 “ vantage. Going out to the ball one night,  
 “ and taking off the flannel rollers which swath-  
 “ ed her swelled legs, she caught cold, and had  
 “ the first return of her pain. She continued  
 “ eight months in all; the muscles of her  
 “ thumbs plumped off, she wound up her watch,  
 “ wrote half a dozen letters a day, and re-  
 “ turned almost well.” She took no other me-  
 “ dicine but an opening pill.

4. “ Mr. Fletcher of *Kent* was often here for  
 “ the same disorder. His colic pain yielded al-  
 “ most instantaneously to the waters, though his  
 “ hands did him little service.”

5. From the mouth of Mr. Anthony Jones,  
 Student of Oxford, I have taken the following  
 case.—“ For some years past I have been af-  
 “ flicted with a pain in my heels, which fre-  
 “ quently shifted into my stomach; for these  
 “ two years last past, my stomach never could  
 “ be said to be free. My last fit began in Febru-  
 “ ary, and continued till May; it was attended  
 “ with perpetual reachings of green and yellow  
 “ bile. At Oxford my disorder was injudiciously  
 “ treated as the *Gout*. The hottest medicines  
 “ were, in my stomach, no warmer than common  
 “ water. A violent pain attacked the muscles  
 “ of my shoulders, and gradually descended till  
 “ it deprived me of the use of both arms. My  
 “ skin became so tender that the softest touch  
 “ was not sufferable, my voice small and fee-  
 “ ble, my eyes weak, with a total relaxation.

“ My

“ My Physicians confessed their ignorance of  
 “ my disease and cure.

“ In the most emaciated condition, I was  
 “ carried to Bath, where I drank the waters  
 “ with all the success that could be expected.  
 “ My stomach pain ceased, my appetite was re-  
 “ stored, and all my complaints lessened. Pump-  
 “ ing and bathing were of particular service. I  
 “ have persisted in the use of the waters for six  
 “ months and more, with small intervals, and  
 “ though I have not yet recovered the perfect  
 “ use of my hands, by the divine permission,  
 “ and the efficacy of these waters, I hope to  
 “ enjoy a complete cure, October 22, 1761.”

Had the Bath-Hospital-Books been accurately examined, they would have exhibited a glaring general proof of the power of Bath-water. The fourth article of the account stands thus, *lame-ness and weakness of the limbs from humours, contusions, colics, colds, fall, &c.* From this how are we to ascertain the number or nature of *Dry Belly-aches*, which have been cured or relieved within these walls for eighteen years? From Dr. Summers's short answer to Dr. Mead's reflection on the Bath-waters, we may however draw some considerable light. Among the 310 paralytic cases, he says, there were eleven *nervous Colics*, or *West-India gripes*. This pamphlet was published in the year 1751; so that we have only to examine the last ten years practice. Had this general account been extracted by this gentleman, we should not have been reduced to the necessity of patching proofs. He privately published one, the only one that the Hospital ever produced. That alone puts the power of Bath-water beyond question.

6. “ In the *Infirmery* there is now to be seen  
 “ a young man of about 19 years of age, who

T

“ (two

## DISEASES CURED

“ (two years ago) was seized with a West-India-  
 “ Colic, after a voyage to these parts. When he  
 “ was admitted, his arms hung useless by his  
 “ sides, his hands dropped inwards, his fingers  
 “ were contracted that it was not in the power  
 “ of force to move them; his legs were con-  
 “ tracted up to his buttocks, he stood on his  
 “ knees, he was wasted to a skeleton.

“ By the use of *Bathing*, he now walks with-  
 “ out crutches, his hands, legs, and arms have  
 “ regained their natural plumpness.”

## CHAP. II.

*Of Diseases of the Urinary Passages.*

*Nephritic Disorders.* “ **T**HAT water should be expelled by wa-  
 “ ter, that drowned men should be brought  
 “ to life by being more drowned, is a miracle  
 “ (says Dr. Baynard) that surpasses Saint Wini-  
 “ fred’s. There are not, however wanting ex-  
 “ amples of hydropics cured by drinking, a  
 “ proof, how little we know either of nature,  
 “ or of art.” With other arts, Physic has its  
 fashions; reformers are looked upon as innova-  
 tors; the generality of mankind stares only  
 at the surface of things. That the secrets of  
 nature should continue secrets to such, we need  
 not wonder. What seems still more unpardon-  
 able is, that to ignorance, we add the sin of in-  
 dolence. In diseases of the urinary passages, we  
 have unquestionable histories of cures perform-  
 ed by Bath waters, before we were born. Such,  
 nevertheless, is the force of custom, that Dia-  
 betes, Dysury, Gravel, Stone, Nephritic-pains,  
 gleet and other diseases of the urinary passages  
 are, by universal consent, consigned to Bristol.

In



In compliance with custom, I refer my rational deductions of diseases of the urinary passages to Part IV. which expressly treats *Of Diseases cured by Bristol Waters*. Suffice it, here, in general, to observe, That, as the same diseases differ in different constitutions, so are the same diseases cured by different waters: Implicit faith, I neither pay, nor require. Bath water has cured, and will cure disorders of the urinary passages. On observation, my proofs are founded. To facts I appeal.

1. In Dr. Pierce's *Bath Memoirs* p. 364, we find the following Cases. Cases.

“ Sir Thomas Ogle, aged 40, was so frequently pressed to make water, and always with sharpness and pain, that he could hardly be long together quiet, without emulsions, and strong anodynes. He had taken loads of medicines.

“ I ordered him Diacassia or Manna half an ounce over night, or early in the morning; and, about seven in the morning, to drink three pints of King's Bath-water. When he took not of the Electuary, he drank two quarts; and, after a while five pints. They gave him usually two or three stools, but past mostly by urine, and did not bring off a great deal of gravel neither; but manifestly abated the acrimony of urine, so that he retained his water, and made it in large quantities.”

2. “ Mr. Belke, aged 30, of the Six Clerks Office, had been afflicted with the same distemper. He drank the waters for five weeks. They passed by stool and urine; he was cured.”

3. “ Sir John Cotton of *Botrux-castle*, had for many years been afflicted with severe fits of the gravel, and stone. He made dark turbid urine, he voided much gravel and stones of

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“ considerable bigness and craggedness, which,  
 “ by lacerating the vessels, occasioned bloody  
 “ water.

“ I began with a purging nephritic bolus.  
 “ He drank three pints of water, which, by  
 “ degrees, he increased to two quarts. Never  
 “ did waters agree sooner, pass easier, and bet-  
 “ ter. He brought off great quantities of sa-  
 “ bulum, and small stones rough and scabrous,  
 “ bigger than barley corns, but friable. He  
 “ held so well all the winter, that this encou-  
 “ raged him to return next summer, and drank  
 “ them till the fabulous matter ceased, and he  
 “ was free from fits.”

4. “ Mrs. Elizabeth Carne, aged 72, hath  
 “ been subject to nephritic pains almost fifty  
 “ years, with frequent fits, and voiding of  
 “ large rough stones. Every time she finds  
 “ the least pain or disorder in the region of  
 “ the kidneys, she drinks three pints or two  
 “ quarts of the King’s pump-water in a morn-  
 “ ing, be the season what it will, and conti-  
 “ nues till she voids gravel or stones of a grey-  
 “ ish colour, one of the worst colours, which  
 “ gives her ease.”

5. “ The second wife of Captain Henry Chap-  
 “ man of this city, was used, of her own head,  
 “ to go and sit three or four hours in the hottest  
 “ part of the King’s Bath, and drink largely of  
 “ the water. To this she imputed the bring-  
 “ ing off the stone sooner and easier. She is  
 “ now living in the 80th year of her age.”

6. “ Mr. Smith, steward to Lord Digby  
 “ was horribly decrepid with gout and stone.  
 “ He had a perpetual desire of making water  
 “ with great sharpness, pain, and stoppage for  
 “ days together. His joints were knotted with  
 “ the gout.

“ B

“ By drinking, he daily discharged vast quantities of gravel, stones, and mucous matter. He bathed, not by my consent. The nodes of his toes, fingers, and knees began to look red, and soft. Some of these tumors opened of themselves, others were laid open. The concreted chalk was picked out little by little. He began to set his feet to the ground, bend his knees, support his body, handle his crutches, and at last walked with a stick.”

7. “ Mr. Edward Bushel, senior, Alderman of Bath, aged 73, laboured, for eleven months under torturing nephritic pains. At last he made bloody water, which encouraged him to try the water. His common dose is a quart every morning with a spoonful of syrup of marshmallows. This doing for nineteen months together, he had perfect ease. By drinking stale beer, he now and then relapses, but his pains are not so violent. I have often heard him say, how miserable a man had I been, had I lived any where but at Bath.”

8. “ Mrs. Studley of *All Cannings* had long been afflicted with continual urgings to make water, smartings, and violent pains, with small streaks of blood, with a heavy ropy sediment, which stuck to the bottom of the pot like bird-lime, and stunk abominably. By drinking she found ease. She bathed also, and found benefit. Business called her away too soon.”

“ Not a few (says the good old Doctor) have been cured by regularly drinking the waters of inveterate virulent gonorrhoeas, and of those weaknesses which they usually leave behind them; for Bath-waters cleanse, heal, and strengthen the parts concerned, and (as in all other acidities, acrimony, and sharpness of

## DISEASES CURED

“ the blood, and nervous juice) they correct  
 “ that corrosiveness, and dilute that acrimony,  
 “ and consequently alter the temper of that  
 “ matter that is discharged, and, by its balsa-  
 “ mic virtue, heals the parts excoriated.

“ This remedy will indifferently serve for the  
 “ softer sex also, who (though they call it by  
 “ another name) are too much liable to the same  
 “ distemper. I dare not give instances, though  
 “ I have them by me.”

Guidot (in his *Bath-Register*) gives the follow-  
 ing Cases.

9. “ Mr. Thomas Brookes, minister, 60 years  
 “ old, having for sixteen years, a gravative pain  
 “ in the back and kidneys, came to Bath, where  
 “ he drank the waters, and voided fine pow-  
 “ der, which subsiding in the urinal, and eva-  
 “ porated *ad siccitatem*, made eight pills as big  
 “ as pistol bullets of the colour and consistence  
 “ of stone. At his return home, he evacuated  
 “ as much as made 44 more. All the matter  
 “ voided in no long time was enough to make a  
 “ ball of stone, six ounces weight, which com-  
 “ ing away, the heavy pain in the kidneys and  
 “ back ceased. Seven years after, I saw these  
 “ balls not at all relented, so hard that they  
 “ rebounded like marbles.”

10. “ A certain person unknown for benefit  
 “ received in distempers relating to the pas-  
 “ sages of urine, gave public thanks in the  
 “ church of St. Peter and Paul, 14th of Octo-  
 “ ber 1688.”

Besides these express Cases, there are not  
 wanting observations, interspersed with the hi-  
 stories of other diseases, which prove the power  
 of Bath-water in disorders of the urinary pas-  
 sages, particularly in that ever memorable gout-  
 ty history of Mr. Long's, to which I refer the  
 curious



curious reader; as also to the effects of Bristol-water.

## C H A P. III.

*Of Pectoral Diseases.*

**T**O Bristol-water, custom has also consigned *Pectoral Disorders,* the province of pectoral diseases. Those who, without evidence, fancy heat, fire, and brimstone, cannot conceive how waters thus impregnated should be safe in pectoral disorders. Those who confine the causes of cough, catarrh, and asthma to inflammation only, hurry away their patients to Bristol. Sometimes they hit, sometimes they miss. If they answer not, the wretch is doomed to death; the very air of Bath is accounted pernicious. In compliance with custom, I refer rational deductions of pectoral diseases to Part IV. which treats expressly *Of Diseases cured by Bristol Water.* Suffice it here, in general, to observe, That, as there are pectoral disorders which yield to Bristol water only, so there are others which require a mineral more active, invigorating, and powerful. That, as there are acrid, thin, hot catarrhs, so there are viscous, cold, and inert. That, as there are hot consuming hectics, so there are putrid. That, as there are consumptions from ulcerated, so there are others from obstructed lungs. That, as there are genuine, dry, nervous asthma's, so there are spurious, moist, and catarrhous; that some proceed from irritation, others from obstruction; that, in some cases, demulcents are indicated, in others attenuants. That, in a word, Bath waters have cured coughs, catarrhs, hectics, consumptions, and asthmas, where all other aids have failed. Let facts speak for themselves, and, first, analogy.

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Guianerus (*De Balneis Aquensibus*) speaks thus,  
 “ Quidam ob antiquum *Catarrhi* descensum  
 “ asthmaticus, adeo male in anhelitu affectus erat,  
 “ ut vix ire posset. Is interdum balneum in-  
 “ gressus, quandoque vero summo mane aquae  
 “ fontis pintam unam et ultra bibebat. In xv  
 “ dierum spatio, *anhelitu* (juvante Deo) recu-  
 “ peravit.”

1. To Pierce's *Memoirs* we are obliged. “ The  
 “ Lady Dutcheſs of Ormond, aged 60, came to  
 “ Bath in September 1673. Her disorder was  
 “ an inveterate cough and asthma; she was  
 “ forced to sit upright in bed.

“ She drank the waters first in small quan-  
 “ tities. Bearing them well, the dose was in-  
 “ creased. She drank them on for a month,  
 “ with little intermission, and so much relief,  
 “ that she expectorated more freely, and lay  
 “ down in bed, her appetite increased, she rest-  
 “ ed better, she bore her journey back better.

“ Passing the following winter (the season in  
 “ which such distempers usually increase) much  
 “ better, she came again four different seasons.  
 “ Every time she improved the first advantage.”

2. “ Lady Mary Kirk, aged 40, subject to  
 “ an *asthma*, so that she was obliged to be bol-  
 “ stered up for nights together, came hither,  
 “ and drank the waters several seasons following  
 “ with great advantage, insomuch that in the  
 “ year 1693, she had few or no returns of those  
 “ fits which usually attacked her in cold and  
 “ wet seasons. In a letter of hers, now in my  
 “ possession, she says that for the whole winter  
 “ past (which to every body else hath been very  
 “ severe) she has not so much as felt an op-  
 “ pression at her breast, much less a cough, that  
 “ kept her from sleeping or eating a meal's  
 “ meat; that she goes abroad in all weathers,  
 “ stays

“ stays out till nine, and rests not a bit the  
 “ worse. She returned last summer, and staid  
 “ till the latter end of October, and bathed even  
 “ in the Hot-Bath as well as drank the waters,  
 “ and did very well.”

3. “ A very worthy Lady, whose name I  
 “ conceal, because I have not her leave, be-  
 “ tween 30 and 40 came hither in August 1693.  
 “ From inheritance she was hydropical, scorbu-  
 “ tical, and asthmatical. She had gone through  
 “ the college.

“ After a fortnight’s drinking, I permitted her  
 “ to use the *Cross-Bath*, which had a different  
 “ operation on her than it commonly has. It  
 “ promoted the passing of the waters by urine;  
 “ she was more lightsome, and breathed more  
 “ freely. She drank and bathed for a month.  
 “ Next year she used the same course for three  
 “ months. She found great advantage.”

4. “ Mrs. Mary Whitaker, a virgin of 39,  
 “ from *Pottern, Wiltshire*, came hither in *May*  
 “ 1681. The winter before her cough was so  
 “ violent that she spate blood. In January she  
 “ was seized with a palpitation of the heart,  
 “ the most troublesome symptom of all, and  
 “ what she took to be the cause of her difficul-  
 “ ty of breathing, whereas it seemed to me  
 “ that the *nervous asthma* (for such I took hers  
 “ to be) caused the palpitation. The cough  
 “ was violent without expectoration. She wheez-  
 “ ed greatly. Upon the least motion she look-  
 “ ed black in the face. Her heart beat as if  
 “ it would come out of her body. She was al-  
 “ ways hot and feverish, had a quick labouring  
 “ pulse. Her symptoms were greatly aggra-  
 “ vated by her short journey of 14 miles.

“ I ordered the waters with *Sal-Prunel*, *Pecto-*  
 “ *rals*, and *Paregorics*. This method she con-  
 “ tinued

“tinued for a month or five weeks, and was by  
“it perfectly restored, and is alive and well this  
“day.”

5. “Sir Henry Andrews of *Loftbury*, aged  
“71, came hither for a *Scorbutic Asthma*, with  
“the *morbew* on his back, breast, and shoulders,  
“and weakness in his limbs.

“He bathed and drank with such success  
“that he came year after year, till other illnesses  
“rendered him incapable to bear the journey.”

6. “The Marchioness of *Antrim*, aged 62,  
“had been many years troubled with a cough,  
“and shortness of breath.

“She drank the waters mostly, bathed but  
“seldom, continued five or six weeks, was so  
“well the following winter that she was en-  
“couraged to come a second time, she prosecut-  
“ed the same course with better success.”

7. “Mr. Harrison of *St. Crosses*, aged 18,  
“had, from his infancy, been subject to coughs,  
“and asthmatic distempers, occasioned (as was  
“said) by a *Quicksilver Girdle*. He had a great  
“palpitation, and difficulty of breathing on  
“the least motion, not even the ambling of a  
“horse.

“He drank the waters for a month or more.  
“His breath was freer, the palpitation well-  
“nigh ceased, he rode from near *Winchester* to  
“*Oxford* in a day. He returned a second, and  
“a third time to confirm the advantage re-  
“ceived.

8. “Richard, Earl of Tyrconnel, came hither  
“in April 1686. He had been a long time *hy-*  
“*pochondriac* and *scorbutic*, but, for some months  
“past, especially in the winter, was seldom free  
“from a palpitation of the heart, an intermittent  
“pulse, a decayed appetite, and a bad digestion,

“After



“ After various trials, particularly a long  
 “ chalybeate course, he was sent to Bath. I  
 “ ordered him *Quercetan's Tartar Pill* over night,  
 “ and to drink two quarts of King's Bath pump  
 “ next morning. He increased the quantity by  
 “ degrees to five pints, and at last to three  
 “ quarts, interposing a gentle purge now and  
 “ then, and two or three bathings. At the  
 “ end of 5 or 6 weeks, he set out chearful and  
 “ well, with a good appetite, the palpitation  
 “ almost abated, and the intermission of his pulse  
 “ scarcely discernible.”

9. “ Summer 1761, the honourable Edward  
 “ Finch came to Bristol Hot Wells, after an  
 “ inflammatory fever, for which he had been  
 “ bled nine times, and blistered five. When I  
 “ saw him, he had an habitual cough, with a  
 “ difficult expectoration of tough viscid phlegm,  
 “ without fever; he was languid, low-spirited,  
 “ and feeble, fifty years old, and upwards.

“ I pressed him to go immediately to Bath,  
 “ I gave him my reasons and opinion in writ-  
 “ ing, which were transmitted to his Physi-  
 “ cian in town, and by him disapproved. This  
 “ being the case, I added Bitters to the Bri-  
 “ stol waters, with a restorative diet. Thus  
 “ he recovered strength, and spirits; but his  
 “ astmatic disorder still continued. At last he  
 “ took my advice, and came to Bath, where he  
 “ drank the waters six weeks. Every glass prov-  
 “ ed an expectorant, he went away perfectly re-  
 “ stored.”

10. “ Mr. Partridge of the *Packhorse, Turn-*  
 “ *ham Green*, was subject to gouty complaints  
 “ from his fourteenth year. Last January, hav-  
 “ ing caught cold, he was seized with an asth-  
 “ ma; he could not lie in bed, his perspiration  
 “ was stopped, his legs were benumbed and  
 “ swelled,

## DISEASES CURED

“swelled, without appetite. Naturally high  
 “spirited, he became so dejected, that he burst  
 “often into tears, on the sight of an old ac-  
 “quaintance. He came to Bath, drank the  
 “waters moderately, and, in six weeks time,  
 “was completely cured. He came down this  
 “winter, by way of prevention, and is very  
 “well.”

11. “Dr. Smollet, author of the History of  
 “England, has laboured under a scorbutic hu-  
 “moral *Asthma*, for three years, and upwards.  
 “To breathe, he has been obliged to shift  
 “different airs, and never continued long well  
 “in any. From a constitution healthy, vigo-  
 “rous, and active, he became emaciate, low-  
 “spirited, and feeble, obliged often to rise out  
 “of bed, and sit up, for hours, his perspi-  
 “ration was quite stopped, his appetite much  
 “impaired. He tried variety of regimens, to  
 “very little purpose, was always the worse for  
 “bleeding. Caught in one of his fits, he put  
 “into the foresaid *Pack-horse*, where he met  
 “with a Director who counselled Bath water,  
 “from experience. Here he slept the very first  
 “night, and every other, for six weeks, drank  
 “the waters, and gained appetite, flesh, strength,  
 “and spirits.—While I correct this sheet, I am  
 “informed he begins to relapse, and intends  
 “a second visit to Bath, where, I dare say, he  
 “will find a perfect cure.”

12. “Mrs. Collins of this city, widow, aged  
 “sixty and upwards, has laboured under an  
 “*Asthma* for many years. On the least mo-  
 “tion, she panted for breath, and was taken  
 “with violent fits of coughing. Her flesh wast-  
 “ed, her strength failed; by all appearances,  
 “she seemed bending fast toward the grave. By  
 “the advice of an empiric, she was, at last press-

“ ed to try that healing fountain, which springs  
 “ up within a few yards of her own house,  
 “ which she did, to the quantity of a glass, or  
 “ two, a day only. She now lies flat in bed,  
 “ sleeps well, eats heartily, her cough is vanish-  
 “ ed, she walks a dozen of turns on the parade  
 “ without being fatigued; whenever she finds  
 “ a difficulty of breathing, she flies to the pump,  
 “ and forgets all her sorrow. She has, at dif-  
 “ ferent times, had the opinion of sundry Phy-  
 “ sicians. To our common reproach be it con-  
 “ fessed, Bristol water, bleeding, issues, pecto-  
 “ rals, and every thing was counselled, and tried,  
 “ excepting the one thing needful, such strang-  
 “ ers are we, even at this day, to the very tools  
 “ by which we earn our bread.”

As the laudentia are equally instructing with  
 the juvantia, and, as Bath waters are truly edge  
 tools, I think it my duty to present unexperien-  
 ced readers with an instance which demonstrates  
 the necessity of caution. The four last cures  
 were of asthmas nervous, convulsive, or cat-  
 tarrhus. “ This very winter, Mr. Wheeler,  
 “ a gentleman of Warwick, aged fifty, and up-  
 “ wards, came to Bath, where, of his own head,  
 “ he drank the waters, for some weeks before  
 “ he consulted me. I advised him to return to  
 “ Bristol, where, it seems, he had been, or to  
 “ go home, and get a couple of *Issues* cut be-  
 “ tween his shoulders. Obstinate bent on the  
 “ waters, I forewarned him of their dangerous  
 “ effects. I told him honestly, I did not think  
 “ them indicated in his case; if he drank them,  
 “ I begged he might not exceed two small  
 “ glasses, thirds of a pint, in the twenty four  
 “ hours; I persuaded him to apply a blister,  
 “ *inter scap.* to be kept open; I recommended  
 “ bleeding, and abstinence from the waters,  
 “ when-

## DISEASES CURED

“ whenever he found signs of heat, or difficulty of breathing. Some weeks after, I was summoned. In the night time, one of the pulmonary vessels burst, he threw up five or six pounds of blood. Dr. Schomberg was also called. By common methods, we averted a second eruption. But, as his strength decreased, fever and other bad symptoms increased, in about a week after he died. His case was different from the foregoing. Naturally of a good constitution, and subject to gout and scurvy, he had diverted nature by hard exercise and drinking. By heats and colds, the morbid matter settled on his lungs, hence atrophy, a cough, shortness of breathing, &c. Bath water was improper in his case.”

## C H A P. IV.

*Of the Gout.**Gout.*

1. **T**HE Gout generally makes its appearance at that period of life when the circulation comes to be confined to a narrower sphere, when the vessels begin to be rigid and impervious, when, in a word, manly vigor begins to decline. Sydenham's description of the gout *regular*, and *irregular*, seems to be copied from nature. Boerhaave's Chapter of the gout (in his *Aphorisms*) is nothing else but an abstract of this. Hoffman has inserted his history in his discourse on this disease. Succeeding writers have mangled a model worthy of imitation. Sydenham seems to be one of the few whom nature has endowed with that sagacity which constitutes the practical physician. Copying the divine old pattern, this second Hippocrates had the



the courage honestly to break through the clouds of ignorance, error, and prejudice; he gently led the Art of Physic into that natural path of *Observation* from which she had so long strayed. Those racking pains which he felt for the greatest part of his own life, enabled him to paint what he felt, and thereby relieve fellow-sufferers by improving the diagnostic and curative parts of medicine.

2. For a work of this kind, the spirit of his *Regulars*, descriptive part may suffice.—The harbingers of *its history*, the *Regular Gout* generally are bad digestion, crudities, flatulencies, belching, heaviness, headaches, nausea, loss of appetite, heart-burns, and wandering pains. The day preceding the fit, the appetite is sharp, and preternatural.

The patient goes to bed, and sleeps quietly till about two in the morning, when he is awakened by a pain which usually seizes the great toe, the heel, the calf of the leg, or the ankle. This pain resembles that of a dislocated bone, and is attended with a sensation, as if warm water was poured upon the membranes. These pains are immediately succeeded by chilliness, shivering, and a slight fever. These last abate in proportion as the pain increases, which grows more violent every hour, till it comes to its height towards evening, resembling tension or laceration, sometimes the gnawing of a dog; and, at other times, a weight and constriction of the membranes, till it becomes at last so exquisitely painful, that the patient cannot abide the weight of the cloaths, nor the shaking of the floor.

The night is not only passed in pain, but with a restless removal of the part affected also. This restlessness does not abate till about two or three of the clock in the morning; namely,

ly, twenty-four hours from the first attack. Breathing sweat succeeds, he falls asleep, and, upon waking, finds the pain much abated; and the part affected, which before exhibited remarkable turgidness of the veins only, now swells.

The next day, and perhaps two or three days after, if the gouty matter be copious, the part affected comes again to be pained; the pain increases towards evening, and remits about break of day.

In a few days, it seizes the other foot in the same manner; and, if the pain be violent in this, and that which was first seized be quite easy, the weakness thereof soon vanishes, it becomes strong and healthy. The Gout nevertheless affects the foot just seized as it did the former both in respect to the vehemence and duration of pain.

When there is a copious fomes of peccant matter in the beginning, it affects both with equal violence; but, in general, it attacks the feet successively as above. When it has seized both feet, the fits are irregular with respect to the time of seizure, and continuance; but the pain always increases in the evening, and remits in the morning.

What we call a fit of the gout is made up of a number of these small fits, the last of which prove milder, and shorter, till the peccant matter is expelled, and the patient recovers; which, in strong constitutions, and such as seldom have the gout, often happens in the space of fourteen days; and, in the aged, and those who have frequent returns, in two months; but in such as are debilitated either by age, or the duration of the distemper, it does not go off till the summer advances.

During the first fourteen days, the urine is high-coloured; and, after separation, or standing,

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ing, lets fall a gravelly red sediment. Not above a third of the liquids taken in is voided by urine. The body is generally costive. The fit is accompanied throughout with loss of appetite, chillness towards the evening, and a heaviness, or uneasiness even of those parts which are not affected.

When the fit is going off, a violent itching seizes the foot, especially between the toes, the skin peels off, appetite and strength return; the juices come to be depurated, the patient finds himself clearer in his understanding, chearful and active. Nature has performed her work.

WE now proceed to the history of the *Irregular gout*.

3. WHEN the body has long been habitu-<sup>*Irregular.*</sup>  
ated to the disease, when it has been exaspe-<sup>*Its history.*</sup>  
rated by quacking, the juices acquire a quality which supplies constant fuel to the flame. Debilitated nature can no longer unload her burden by the *feet*, the genuine outlet of the morbid matter, it corrodes the capillary vessels, stagnates, and curdles the *sinovia*, a liquor designed for lubricating the joints. This hardens into chalky matter, distends the skin, inflames, breaks through, and discharges itself in a fluid or solid form. It not only stiffens the joints, but it fixes on the tendons, and forms lodgments in the interstices of the muscles. Hence excruciating pains, and lameness.

The particular fits which compose the general, sometimes continue fourteen days without intermission. The patient is besides afflicted with sickness, and a total loss of appetite. The cardinal fit continues till the summer heat comes on.

During the intermission, the limbs are so contracted and disabled, that the patient can hardly walk. The reliëts of the morbid matter fly to the bowels, the hæmorrhoidal vessels grow painful, the stomach is oppressed with nauseous eructations; the urine resembles that of a *Diabetes*, the whole man is debilitated. Hence low spirits, melancholy, &c.

When the disease becomes inveterate, after yawning, especially in the morning, the ligaments of the *metatarsus* are violently stretched; they seem as if they were squeezed with great force. Sometimes, though no yawning has preceded, when the patient seems disposed to sleep, he feels a blow of a sudden, as if the *metatarsus* was breaking in pieces, so that he starts, roaring out with pain. The tendons of the muscles of the shin-bone are seized with so violent a cramp, that the pain is insupportable.

But, after many such racking pains, the following paroxysms become less painful, an earnest of approaching delivery by death. Nature, oppressed by disease and old-age, can no longer drive the morbid matter to the extremities. Sickness, lassitude, looseness, &c. usurp the place of pains. These ease the pains, which return as these go off. Thus, by a succession of pains and sickness, the fits are prolonged to an uncommon length. The pain diminishes, the patient sinks at length through sickness rather than through pain. In a word, pain is nature's harsh remedy, by which she endeavours to relieve herself; the more violent it is, the sooner the fit terminates, the longer, and more perfect is the intermission, and c. c.

The gout also produces stone and gravel. The mind sympathises also with the body. Every paroxysm may as justly be denominated a fit



a fit of anger as a fit of gout. The rational faculties are so enervated, as to be disordered on every trifling occasion; the patient comes to be troublesome to others, as well as to himself. Fear, anxiety, and the passions torment him also. Sometimes he swears, then prays, and cries.

The organs of secretion no longer perform their functions; the blood, overcharged with vitiated humors, stagnates; the gouty matter ceases to be thrown on the extremities. Death puts an end to misery. This is the history of the gout. We now proceed to enumerate the causes which produce the paroxysms.

4. PRINCES, Generals, Statesmen, Philosophers, the rich and opulent are the people who are generally subject to the gout. Never was the gout so frequent as at this day. Women and children are martyrs to a disease naturally peculiar to men. The English are more subject to the gout than the inhabitants of any other country. Their children are ruined in their *Nurseries*. Their stomachs are crammed in their cradles. Their tender limbs are enervated with flannels, the external air is excluded as pestilential, they are ever after incapable of enduring the natural rigors of their mother climate. Quintilian's with hugely suits the manners of the *Times*, "Utinam liberorum nostrorum mores ipsi non perderemus. Infantiam statim deliciis solvimus. Mollis illa educatio quam *Indulgentiam* vocamus, nervos omnes corporis et mentis frangit. Fit ex his consuetudo, deinde natura." Providence bestows her gifts more equally than we are apt to allow. The gout destroys more rich than poor, more wise men than fools, she tempers her profusion of good things with mixtures of evil; so that it appears

*Persons chiefly attacked.*

*Causes.*

## DISEASES CURED

to be decreed that no man shall enjoy unmixed happiness, or misery. The poor man's children are plump and rosy, while his Lord's look wan and puny. The *Scots* train up their offspring in simplicity. Custom becomes a second nature, they fall in love with temperance, they care not what they eat, nor wherewithal they are cloathed. The gout is a disease unknown to their poor, and rare among their people of distinction.

Violent exercise, sudden heats and colds, hard study, luxurious meals, night-revels, early venery, and the sudden interruption of wonted customs or exercises, all contribute to anticipate the approach of the gout, especially in bodies unwieldy and replete with gross humors.

*Hereditary.*

5. The gout not only lays hold of the gross, intemperate, and indolent, but sometimes it attacks the lean, sober, and active, if they have received the taint from gouty parents. Thus it comes to be interwoven with their very constitutions. Strict regimen, and over-cautious use of the *Nonnaturals* not only avail little, but they sometimes weaken the concoction so far as to render nature incapable of throwing her load on the extremities. The valetudinary sons of gouty parents feel the curses of old-age, before they reach the years of puberty. In *Spain*, p---s descend by inheritance, as gouts do with us. No people so careful of the breed of their cattle as the *Englisk*. No people so careless of posterity. Health and beauty wed disease; filthy lucre contaminates the purest blood.

*Rules.*

6. The reader will hardly expect to meet rules sufficient for directing him in the cure of a disease which baffles art. There are certain rocks on which gouty patients have suffered shipwreck.

there are duties which they owe to themselves; these are both necessary to be known. In the regular gout, *patience* and *flannel* seem to be the requisites. The *irregular* puzzles the *College*.

Nature uninterrupted throws the morbid matter of the gout on the extremities. Whatever weakens, hurries, or disturbs nature, injures the constitution. Evacuations of all sorts, topical applications, and bitters are, at best, necessary evils. Part VII, the gouty reader may find cautions worthy of his notice, particularly under the section of *Preparation*.

7. If *Evacuants* and *Topics* are rather hurtful *Bitters*, than beneficial, whence are we to expect a cure? Sydenham says, he cannot help thinking but that a radical cure may be found out. Till then he supposes the primary cause of the gout to proceed from *Indigestion*, together with a consequential *acrimony* of the humors. Such medicines as are moderately heating, bitter, or pungent, purify the blood, and strengthen the first passages. For this purpose, he recommends *Angelica*, *Elecampane*, *Wormwood*, *Centaury*, *Germander*, *Ground-pine*, and the like, in a compound mixture, continued for a long time. Such medicines increase the circulation, and thus strengthen. —Of all the strengtheners of digestion, Dr. Cheyne prefers a strong infusion of the *bark* in generous claret joined with chalybeates. Boerhaave, Sydenham's implicit admirer, says, *Curatio quam contemplatio mali, et experientia commendavit, absolvitur restitutione vigoris in visceribus perditis*. From the writings of the antients, as well as from experience, these gentlemen joined in the same opinion. Caelius Aurelianus's *Diacentaureon*, and Aetius's *Antidotos ex duobus Centaureae generibus* are old names for *Portland's powder*. Tournefort (in his *Histoire des plantes qui naissent aux environs*

*virens de Paris*) gives an exact description of it with the addition of the *Centaurium majus*. The Faculty of *Paris* has adopted it into their *Codex Medicamentorum*, substituting the *Rhaponticum* in the room of the *Centaurium majus*. By the persuasion of a friend, the Duke of Portland took it for a hereditary gout, and found such relief, that humanity induced him to publish the prescription, which differs not essentially from Sydenham's. Its indiscriminate use has averted fits of the gout, and substituted mortal or incurable ailments in their room.

*Portland's  
powder  
fatal.*

1. "Mr. Fraigneau, *Confectioner* to the late King, "was about forty years old. By a hereditary "gout, he had for many years been so much a "cripple that he hobbled only by the help of "two sticks. Every year he had regular fits, "in the interval was chearful, lively, and sensible. Importuned by the *Great*, he took "*Portland's powders* strictly. He lost his regular salutary fits. His stomach was at last so "tanned with a farrago of astringent bitters, "that it lost its retentive quality; he threw "up every thing, even the bitters themselves. "After various regimens in Town, he came "at last to *Bath*, where, by drinking the water, his vomiting stopped, but soon returned. By Dr. Nugent's advice and mine, he "took various antiemetics, all at last to no purpose."—In his case it may be worthy of remark, that when, by warm medicines, we could obtain inflammation and pain on any joint, his vomiting ceased, but the warmest at last proved ineffectual. With his last breath he cursed the *powders*.

2. "Thomas Boucher Esquire was also freed "from his gouty fits by the powder. Some time after he was afflicted with a violent fever, "which



" which bequeathed him an inveterate rheumatism, and distortion of the joints of the fingers."

8. As *Evacuants, Topics, and Bitters*, all directed to the Cure. disturb nature, we may perhaps be led to a more powerful, and safe specific, by taking a nearer view of nature.

Those diseases which are soon brought to concoction, or soon prove fatal, we call *acute*. Nature raises a fever as its instrument, whereby the blood comes to be depurated from whatever is noxious.

Those diseases which require a long time, or never come to concoction, we term *chronic*. When the *stamina vitae* are much debilitated by intemperance, or old age; when the secretory organs can no longer perform their office, humors are collected in greater quantities than they can be discharged. These undergo various alterations, they occasion various diseases according to their degree of fermentation, or putrefaction. Hence it is that the aged are more subject to those diseases which proceed from indigestion than the young, whose vital warmth subdues, or expels noxious humors. Hence it is that invalids enjoy a better state of health in summer than in winter. Hence also it is that travelling into southern climates, cures diseases incurable in northern. Heat not only creates that juvenile fever which depurates gross humors, but it prevents their accumulation.

This doctrine is evidently confirmed by that incredible relief which riding on *horse-back* procures to people labouring under chronical disorders. While it strengthens the digestive powers, it rouses that vital heat which enables the secretory organs to purify the blood.

Proinde curatio absolvitur (1) *restitutione vigoris in visceribus perditis*, (2) *Ablutione liquidi jam corrupti fluentis in vasis, vel stagnantis*. "Not only by restoring the lost vigor of the bowels, but by carrying off the corrupted fluids flowing, or stagnating in the vessels, says Boerhaave."

Had Sydenham been acquainted with the internal virtues of *Mineral Waters*, or had he weighed the effects of *Warm-Bathing* in his judicious mind, he would have found a medicine endowed with virtues far superior to his admired *Bitters*, a medicine which (in the course of days or weeks) not only restores the lost vigor of the bowels, but depurates and carries off corrupted juices, a medicine which cures *cito, tuto, et jucunde*.

In all ages waters have been used internally and externally. The practice of *drinking* and *bathing* is rationally and succinctly laid down by Baccius, in his book *De Thermis*, pag. 119 and 120, under the article, *Juncturarum et Articulorum morbis*. Having laid down rules for treating other affections proceeding from *cold temperament*, he observes that, in the gout, the joints are inflated, pained, and contracted from cold temperament also; these therefore he proceeds to cure in the same manner, *per calida balnea condecienti usu curari*. According to the different indications, he lays down different methods of cure; for slight affections, he proposes drinking, for more stubborn, bathing, *nam inveteratam arthritim, seu chiragra sit, seu podagra, sive Ischias, parcius sanabit potatio, lavacra majorem habebunt efficaciam*.

By way of preparation, he advises the patient to drink a cup of purging waters for some mornings, to absterge those viscidities which give rise

to the gout, *quae crassas a latis meatibus visciditates, pblegmataque, praevias artbritis causas, foras extrudat.*

In an universal gout, he orders the patient to bathe in warm discussory water. If there happens suspicion of distillation of humors from the head, he refers him to the pump, as in nervous affections, *quas etiam si distillatio imputetur (ut plerumque fit) ad usum Ducciae, qualiter in nervosis, usurpare licebit.* He orders conspersions not only on the occiput, for the prevention of distillation, but on the member swelled or afflicted; by way of discussion, he advises Lutations also, *et itidem illutamenta.* In incipient cases where there are many parts at once affected, he orders sweatings. *At si plures, ex dissipata fluxione, articuli conflitentur, sudationibus etiam utendum, quales in Baianis sudatoriis, et multis aliis.* After the flux of humors has abated, he advises arenation, insolation, &c. *Arenatio efficacissimum remedium est universae artbritidi, tumenibus praesertim lento ac frigido humore articulis.* Vitruvius gives examples of men relieved by swimming in the *Cydnus*, *Scamander*, and other rivers of *Greece*. Thus far of gout proceeding from cold temperament.

In gout arising from hot temperament, he lays down one admonition well worthy of notice, viz. To purge off those humors which by bathing and sweating might be exasperated. *Medicatarum potiones, digerendo, vacuando, ac fluctiones inbibendo, quam lavacra calidarum, aut exudatio, quae liquatis viscidis, ac prius sopitis humoribus excitatis, fluxioni ne adaugeant materiam tumendum.*

He recommends drinking in gouts which attack people in the bloom of life, or heat of summer, which may be by following temperate strength-

strengthening baths. *Maxime vero commoda potatio, si (ut in pluribus accidit) a causa calida incipiat fluxio, vigente praesertim aetate ac aestate in-eunte; cui ministerio si lavacra commoda subsequantur, haecque temperata sunt, et quae, ex ferri qualitate, egregie valent confirmare.* Such are the *Balnea Villae Lucae, Caiæ, Porretanae, Albulæ, &c.* and such are our *Cross* and *Queen's*. These strengthen weak joints, and alleviate pains. On this principle Dioscorides bathed *Ischiatics* in brine. Cornelius Celsus (Lib. iv. cap. 24) heated brine, with which he fomented the feet, covering the patient with a cloak. Baccius recommends a fomentation of the mother of wine in disorders, from experience. In tubs of fermenting wines, he orders the part affected, or even the whole body, if it happens to be weak, to be immersed.

*Solvere nodosam nescit medicina podagram* was the opprobrium of his days, as well as ours. He, nevertheless, advises a trial of unguents and bathings in gouty concretions. *Tentandum tamen non adeo confirmatos callos per olei, aut assiduum Hydro-laei fotum emollere, exudationibus aperire, dispositos per balnea calidiora, iisdem ex alto dispersis discutere* In chalk-stones, gibbous and contracted joints, Baccius recommends a leaden bath in *Lethoringiis*, the *Tritoli*, and many more. He recommends salt baths, *lutations, saburrations, vaporaries, insolations, &c.* all which were rationally, and successfully practised at *Baiæ, Puteoli, Cumæ, Vesuvius*, and other places. To the doctrine of this most excellent author I not only think myself obliged to assent; but, from reason and experience, I dare affirm, that when the waters of Bath come to be rationally applied, they will be found second to none. Bath water restores the appetite, promotes the lesser secretions, and

paves



paves the way for medicines. When the *vis vitae* is not, of itself, sufficient for protruding the gouty fomes to the extremities, Bath water is preferable to all the panaceas of the shops. The effects of the latter are momentary only, Bath water invigorates the blood, and regenerates the constitution. Bathing opens obstructions, and strengthens. In Dr. Home's *Principia Medicinæ*, pag. 163, this opinion seems to be confirmed; his words are these, "Vires concoctrices roborantur chalybe, vel aquis chalybeatis, *Thermis Bathoniensibus* præcipue."

9. In indigestion, flatulency, belching, nausea, Cases. loss of appetite, heart-burns, lowness of spirits, wandering pains, and other symptoms, harbingers of the gout, there are votaries who daily own their obligations to Bath.

1. Sir William Yonge, every time that he came down, got rid of the pain of his stomach, almost by the first glass. The truth is notorious.

2. "Mr. Greenfield, Apothecary of Marlborough had, for many years, been used to regular fits of the gout. As old-age advanced, the paroxysms left a debility of the stomach, with belchings, indigestion, and low spirits. For these complaints, he came down every year pale, wan, and enervated. Every trial converts his symptoms into a regular paroxysm, which he nursed at home with patience and flannel. He left off coming to Bath at last, and thus shortened his days."

3. For the benefit of fellow sufferers, I am requested to publish the case of *John Eaton, Esquire*, of this city, an unquestionable proof of my present position.

" By

## DISEASES CURED

“ By frequent courses of drinking Bath-water,  
 “ I procured regular fits of the gout, which  
 “ before afflicted me much. In July, 1759,  
 “ I was seized with a pain in my stomach,  
 “ and bowels, which, (though not acute) con-  
 “ tinued for near a month; when it left a great  
 “ trembling in my hands, with loss of appetite,  
 “ and lowness of spirits. These symptoms con-  
 “ tinued some weeks, and ended at last in a  
 “ weakness of my limbs, so that I could neither  
 “ stand, turn in my bed, nor lift my hands to  
 “ my mouth.

“ These complaints induced me to come to  
 “ Bath, where I put myself under the care of  
 “ Dr. Oliver. I was carried to the *Pump*, where  
 “ I drank a pint of water a day, at three dif-  
 “ ferent draughts, all in the morning. I drank  
 “ the Bath-water mixed with wine also at my  
 “ meals. This course I have pursued till now,  
 “ interrupting them now and then for a fort-  
 “ night; about December I left them off for  
 “ ten weeks.

“ My strength increased gradually, I am now  
 “ able to walk, and to assist myself as well as  
 “ can be expected from a man who has been so  
 “ much troubled with the gout, of which I  
 “ had several slight fits since my residence at  
 “ Bath.”

John Eaton.

*Bladud-Buildings, 11th April, 1761.*

*Useful  
 caution.*

WHEN the patient has gone through a regu-  
 lar fit, when the paroxysms have purified the  
 habit, when he finds his spirits lively, and his  
 senses clear, he ought then to bathe in water  
 rather cooler than the heat of the human blood.  
 Tepid-bathing is a rational remedy for clearing  
 the

the vessels of the dregs of the disease. The Cold-Bath completes the cure.

The patient then ought to bid adieu to Bath-water. This caution may not perhaps be impertinent, when we consider that there are numbers who blindly jog on in the circle of curing and procuring gout by the same specific, till by indolence, waters, drugs, and effeminacy, their constitutions are ruined. Nature thus misled, the fribble dies at forty (who, by air and manly exercise) might have prolonged his life to green old-age.

Bath-water has performed wonders in the gout, *externally* as well as *internally*. When the chalky matter breaks through the small vessels, it forms lodgments in the interstices of the muscles, it deposits itself on the tendons, which it thickens, stiffens, and renders unfit for muscular motion, it dries up that liquor which serves for lubricating the joints, it forms anchylosis's. Persons thus affected have been recovered by Warm-Bathing, but not on the principle of *softening*, or *relaxing*, as imagined by Dr. Oliver in his *Essay on the use, and abuse of warm-bathing in gouty cases*; for I have already proved Bath-waters to be *hard*, *bracing*, and *astringent*. Nor do they contain particles *saponaceous*; for, they are not such powerful solvents as common water. His little performance is nevertheless fraught with practical reflections, and cautions well-worthy of the perusal of the gouty reader, a convincing proof that, though in theory we may be mistaken, observation and experience will direct us to the truth.

Of the doctrine of *Rarefaction* and the effects of *fevers* artificially raised, we have in the first part treated. Suffice it here to say that, the diameters of the vessels thus enlarged, the molecules,

leculae, which were too large to pass in their contracted state, are ground down by repeated circulation and depuration.

4. Savonarola (in his second book *De Balneis montis Grotti*) mentions *Quendam Marchionem Estensem a podagra, & doloribus podagricis ac juncturarum per haec balnea liberatum.*

*Proofs analogous.*

5. “Guianerius (*De Balneis Aquensibus*) mentions the Case of a Marquis, who was tormented with gouty pains, for seven months without intermission; infomuch that his physicians were not only obliged to foment the part, but they embrocated his foot often with two drachms of *Opium*. The pain was mitigated, but never could be removed. This nobleman lost the pain on the third bathing. In twenty days time he grew surprisngly fat.” *Terna vice balneatus, dolorem ex toto perdidit. Intra dies xx ultra solitum impinguatus fuit.*—6. “Another Marquis of *Este*, who was often tormented with the gout, received great benefit by the baths.” *Ex balneis ipsis grande proficuum recepit.*

7. “Ugulinus (*De Balneis Villae Corsennae*) tells an instance of *Petrus Joannes*, a Perfumer, who, by the gout and wounds of the joint, was quite a cripple. I saw him walk with a little help in the Bath, the second time; and, in twenty days time he rode a gallop to *Florence*.” *Ad viginti dies Florentiam valide equitavit.*

*Cases.*

8. “Dr. Pierce (in his *Bath Memoirs*) mentions the following Case of his own father-in-law, Mr. *David Tryme*. From between 50 and 60, he had been subject to fits of the gout at great intervals, tho’ he drank freely, and rode hard. When he had a fit, he used plaisters and ointments of all sorts. At the

“age



“ age of 83, he was attacked with a severe fit, which first seized his toes and fingers, to which he used to apply whatever was proposed; by which he fell into fainting fits, out of which he was with great difficulty got by the use of strong waters and cordials.

“ These threw the gout *a centro in circumferentiam*, into his hips, knees, and feet, so that he was, for some days, in excessive pain, which he chose to bear rather than again to apply his plaisters. Patience and posset-drink eased the pain by degrees, but left so great a weakness, and stiffness, that he could neither walk, stand, nor extend his legs. From July to April, he remained a cripple.

“ He was lifted in and out of the *Queen's* and *King's-Baths*. After three weeks bathing, he not only walked between his guides, but he swam twice round the *King's-Bath*. He recovered, and lived five years longer without any severe fit of the gout.”

9. “ Robert Long Esquire, of *Prior-Stanton*, in the 89th year of his age, was much enfeebled with severe fits of the *gout*, was weak in his limbs, and tender in his feet. He bathed in the *Cross-bath* fourteen or fifteen times. He walked more erect and nimble, has a smooth fresh florid countenance, and is likely to pass another seven years.”

Dr. Pierce's third *Case* may rather be said to be a regeneration than a cure.

10. “ George Long Esquire of *Downside* near *Surprising Wells*, was, upwards of twenty years past, attacked by the *Gout* and *Stone*. He was pained in every joint; his fingers became crooked, his right knee, hips, and back motionless by calculous matter, which crammed itself  
“ into

“ into every joint. He was bed-ridden. His  
 “ thirst was importunate, his appetite lost, his  
 “ skin shrivelled, his face meagre, his hair grey,  
 “ his flesh wasted, so that he could throw the  
 “ calf of his leg over his shin-bone. With all  
 “ this, he had a perpetual sharpness of urine;  
 “ nay, all the juices of his body had such a pro-  
 “ pensity to lapidescency, that his water being  
 “ left, but a few days, in an urinal, was crufted  
 “ at the side and top as thick as half a crown,  
 “ with a porous kind of stone like that of a  
 “ *pumex*.

“ In this condition, he was, with difficulty,  
 “ transported to *Bath*. He began with drink-  
 “ ing the waters hot from the Pump in the  
 “ morning; at meals cold, for he drank not  
 “ then, nor hath he since drank any malt liquor.  
 “ In a week’s time, his thirst abated, and the  
 “ sharpness of his urine lessened; his stomach  
 “ began to return. After a month’s drink-  
 “ ing, he bathed between whiles, which eased  
 “ his pains much. In the Bath, he could  
 “ suffer his legs to be extended a little.

“ He returned home in about six weeks,  
 “ and drank the waters there. In three  
 “ months after, he returned, bathed, and drank  
 “ six weeks as before. In the mean time, he  
 “ gathered some flesh, and strength, with some  
 “ small ability to go, though criplishly.

“ In November following, his grey hairs be-  
 “ gan to fall off; new ones succeeded; nay, he  
 “ says, his grey hairs turned to a soft brown,  
 “ which grew so fast, that he cut more than an  
 “ inch every four or five weeks. By *Candlemas*,  
 “ he hardly had a grey hair left. Even now,  
 “ bating a little baldness on the crown, (for he  
 “ is on the wrong side of fifty) it looks like a  
 “ bor-

“ der of hair, which I have seen before whole heads were so much in use.

“ To perfect his recovery, he took a house, and lived here for the most part of the next year 1692, about which time, his toe-nails, which were hard, ragged, and scaly, began to be thrust off by new and smooth ones. His arms and hands recovered strength, he had much freer motion of his joints, his muscles plumped. He was daily more and more erect; every bathing stretched him half an inch. He had now a fleshy hale habit of body, a vigorous eye, and a ruddy, plump, youthful face, especially when he mixes *Sherry* with his water, which he will sometimes do. In fine, he hath no fit of the *Gout* to lay him up long together, nor the least touch of stone, or sharpness of urine. He rode from *Bath* to *Oxford* in a day, which is forty-eight computed miles; and, but a few days before that, went from hence to his own house, which is twelve or fourteen long miles, after twelve o'clock at night; went to bed for two or three hours, rose again, and dispatched a great deal of business before dinner. His Wife being asked a question about his rejuvenescency, answered, *I verily believe, if I was dead, he would marry again.*”

Dr. Pierce was regularly bred at *Oxford*, was also C. M. L. S. and practised with reputation at Bath for almost threescore years.

11. “ Dr. Guidot (in his *Register* of Bath) mentions the *Case* of a merchant of London of 70 years of age, so afflicted with the gout, that, for six weeks time, he could not go to bed, or rise without help, having also used crutches for many months. By the use of the *Cross Bath*, and rubbing well with the Guides  
X “ hands,

## DISEASES CURED

“ hands, at three seasons of *Batbing*, so far re-  
 “ covered, that using only a stick, which he  
 “ usually wore, he now walks strongly, both  
 “ hands and feet being flexible, and free from  
 “ pain. He subscribed the benefit received,  
 “ 5 August, 1676. R. P.”

8. “ Sir Francis Stonor Knight, received  
 “ great benefit in great weakness from the *gout*,  
 “ by the use of the *Queens* and *Kings Bath*, in  
 “ gratitude for which he gave a considerable  
 “ sum of money by which the *stone rails* and  
 “ *pavement* were built about the *Kings Bath*.”

In Dr. Oliver's *Essay* before mentioned, we  
 find two *Cases* to our purpose. The first is con-  
 tained in a letter from Charles Edwin Esquire  
 the patient, to the Doctor. The second relates  
 the Case of a patient of Dr. Woodford's, Reg.  
 Prof. Med. Oxon. in the *Bath Infirmary*.

12. “ Mr. Edwin's second fit of the *gout* left  
 “ a weakness in the joints of one foot. In a suc-  
 “ ceeding fit, it attacked the other foot and an-  
 “ kle, afterwards one of his hands, and both  
 “ knees, so that he could not bend or move his  
 “ ankles; he could not walk. After his third  
 “ bathing, he was able to walk in his room  
 “ without the help of crutches, and gained  
 “ strength so as to walk about the town with a  
 “ cane.”

He bathed sixty-five times, and pumped thirty-eight. “ It is remarkable (says the Doctor)  
 “ that, during this course, he never had one  
 “ symptom of the humor's being throwen up-  
 “ on any vital part, neither has he had any vio-  
 “ lent fit of the *gout* since.”

13. “ Philip Tuckey, aged about 50, was  
 “ born of gouty parents, and improved his woe-  
 “ ful inheritance by a very free way of life.  
 “ When he was about twenty-seven years old, he

“ was



“ was attacked in the great toe. For some years,  
“ he had fits at uncertain periods. About twelve  
“ years ago he got a violent cold by painting  
“ (which was his profession) a new built house.  
“ This threw the *gout* all over his head, sto-  
“ mach, bowels and limbs. The pains con-  
“ tinued to torment one part or other for five  
“ months, and left him so weak, and lame, that  
“ he could never after walk without crutches.

“ His knees were almost immoveable, the  
“ membranes which surround the joint being  
“ much thickened, and the tendons which draw  
“ the legs towards the thigh being hard and  
“ contracted. His legs, ankles, and feet, were  
“ much swollen and oedematous. He had lit-  
“ tle appetite, and a bad digestion. His spi-  
“ rits were low, to which despair of recovery  
“ contributed not a little.

“ After his first passages had been cleansed  
“ by warm purges, he began to drink the wa-  
“ ters in moderate quantities. He soon found  
“ his appetite and digestion mend, his spirits  
“ were relieved. Having persisted in this course  
“ some days, he was ordered to bathe three  
“ times a week. He had not bathed thrice be-  
“ fore the tendons began to supple, and to give  
“ way to the extension of his legs. By a few  
“ more bathings, the swellings of his joints  
“ gradually decreased, but without any symp-  
“ tom of the stagnant humor's being translated  
“ to the head, stomach, lungs, or bowels. He  
“ took a warm purge now and then, to clean  
“ the passages, as well as to discharge the gouty  
“ matter which had been moved by bathing.  
“ Thus, he went on, gaining strength daily,  
“ so that, in a month's time, he walked two  
“ miles with only a single stick, without being  
“ tired

## DISEASES CURED

"tired. In this happy condition he was discharged in two months."

14. "Sir Cordel Firebrace came to *Bath* a very cripple by the *gout*. Against the opinion of his Physicians, he was carried into the Bath. He tarried, for hours together, in the very hottest parts of the Bath, and was cured."

## C H A P. V.

*Of the RHEUMATISM.*

*Rheumatism and gout distinguished*

1. **R**HEUMATISM and Gout may truly be said to be nearly allied. These disorders are so often mistaken for one another, and, consequently, mal-treated, that it may, therefore, be useful to lay down general rules whereby they may be distinguished.—Gouty matter tears the small vessels, and, thus, produces fevers, pain, swellings, and redness of long duration.—The pain of the rheumatism is tensive, heavy, gnawing; and continues after the fever is gone, without remarkable tumor, or redness.—The rheumatism often attacks but once, or twice in life.—Paroxysms of the gout are rather temporary depurations than complete cures.—The rheumatism has been cured.—The gout is the reproach of the art.

*Division.*

2. The rheumatism is distinguished,  
Into *febrile*, and not *febrile*.  
Into *universal*, and *local*.

*Causes.*

3. Its remote causes are sudden chills, changes of winds, excessive loss of blood, superpurgation, plethora, surfeits, drinking, excessive venery, intermittents, scurvy, and pox.

4. Its proximate causes seem to be obstruction of the serous and lymphatic vessels, especially of the membranes and ligaments, occasioned by viscid acrid serum.

5. The

5. The febrile symptoms are lassitude, rigor, *Symptoms.* chilliness and heaviness of the extremities, quick hard pulse, thirst, restlessness, costiveness. After a day or two, sharp shifting pains occupy the joints, with swelling and inflammation; these are increased by motion, and often shift their seat. The blood puts on the pleuritic cast. Sometimes it seizes the head or bowels. The pains continue after the fever. Tubercles, and stiff joints often follow.

The non-febrile symptoms are wandering pains, with stiffness in the muscles, or ligaments, without swelling, chiefly.

6. While the rheumatism occupies the extre- *Prognos-* mities only, the prognostic is fair, and e. c. *tics.* Chronic disorders or gout are often consequences. In febrile rheumatisms, Bath and Bristol waters are improper; for both enrich the blood. Over hot Baths increase the momentum of the blood, and thus, add to its sizziness.

7. In chronic rheumatisms, natural medicat- *Cure.* ed waters act internally, by their demulcent, aperient, and diaphoretic qualities; and externally, by their penetrating, and anodyne.

8. In his *Bath Memoirs*, Dr. Pierce relates the following cures.

1. " Dr. Floyde, bishop of Litchfield, had *Cases.* such pain and weakness in the right shoulder and arm, that it interrupted his rest; he came to Bath, and, by *batheing*, and *pumping*, received such benefit, that he continued well for ten or twelve years after. It then returned with greater violence, so that his body yielded to that side. By bathing, and pumping, he recovered."

2. " Major Arnold complained of a very great pain and weakness from his left shoulder downwards to his fingers end. He had

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“ pain also in his right hip, thigh and leg. He  
 “ had withal a violent cough, he discharged  
 “ much and foul spittle; he had little or no sto-  
 “ mach, and sometimes cast up what he had  
 “ eaten. He was subject to the *Stone*, and for-  
 “ merly voided much *gravel* and small stones.

“ Making too much haste to be well, he went  
 “ into the Bath presently, and suffered by it.  
 “ After due preparation, I put him first upon  
 “ drinking the waters, because of his nephri-  
 “ tic disorder, and then permitted him to bathe.  
 “ At two months end, he returned perfectly  
 “ cured as to cough, stomach, and rheuma-  
 “ tism.”

3. Dr. Guidot (in his *Register*) records the  
 “ following. “ Mr. Arthur Sherstone of *Brom-*  
 “ *ham* aged 50, after a short journey was taken  
 “ with a *rheumatism*, which, after violent pains  
 “ universal, seized on his hand, knee, and  
 “ foot. He also lost the motion of his lower  
 “ limbs. By bleeding, and other evacuations,  
 “ the inflammation, and swelling abated consi-  
 “ derably, but the running pains remained so as  
 “ to take away the use of both arms, by turns.  
 “ By the moderate use of the Queens-Bath, he  
 “ recovered.”

4. “ John Binmore of Exeter, for benefit  
 “ received in the *rheumatism*, which had super-  
 “ induced both palsy and dropsy, by drinking  
 “ the waters, and the use of the mud, he gave  
 “ public thanks to God.”

5. FROM May 1742, to 1760, there were 575  
 rheumatics admitted into the *Bath Infirmary*.  
 Of these 183 were cured, 280 much better.



## CHAP. VI.

## Of FIXED PAINS.

## I. Of the LUMBAGO.

THE *Rheumatism*, *Lumbago*, and *Sciatica*, are *Lumbago* species's of the same genus. They differ only in the names of the parts of the body which they attack.

The *Lumbago* is often mistaken for the *Nephritis*: the distinguishing sign is, the latter is attended with vomiting, the former not.

Dr. Pierce (in his *Bath-Memoirs*) has recorded *Cases*. 1. "William Lord Stafford was affected in both hips, and in the lumbal muscles also. He bathed in the *Cross Bath* for five or six weeks, for it was summer, and went away better. In October he returned, finding his pains renewed so as to make him roar. When the weather was moderate, he bathed in the *Kings-Bath*; when it was foul, in a tub. About the middle of February, he went to London recovered."

2. "Lady Dowager Brooke was seized with a *Lumbago*, or *Double Sciatica*, with violent pains which bended her double. By the advice of three of the most eminent physicians of London, she had gone through several courses of physic, with hardly any amendment. A salivation was at length proposed, which she positively refused, proposing *Bath* of her own accord. This resolution was vehemently opposed by three out of the four. *Willis* took a formal leave of her, washing his hands, and prognosticating certain death. She set out nevertheless in September,

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“ and entered presently on bathing in the Cross-  
 “ Bath, drinking sometimes of the water. In  
 “ the first week, she found ease, could stand  
 “ upright in the Bath; in a month’s time, could  
 “ walk in her chamber, and was perfectly re-  
 “ covered. Her Doctors, when they took their  
 “ leave, packed her up a peck of medicines,  
 “ which she never tasted, nor indeed hardly any,  
 “ while she staid here.”

II. *Of the SCIATICA.*

*Cases.*

1. Dr. Pierce’s first Observation is that of  
 Duke Hamilton. “ His Grace came hither ve-  
 “ ry *unweel*, as he himself termed it, by rea-  
 “ son of a pain in his hips, which caused him  
 “ to go very lame, and disturbed his rest at  
 “ night, and had done so for many months be-  
 “ fore.

“ After due preparation, he entered the Bath,  
 “ and sometimes drank the waters in the Bath  
 “ only, to prevent thirst. After a week, or  
 “ ten days bathing, he was pumped on the af-  
 “ fected hip. This course was continued for a  
 “ month, or five weeks, by which *His Grace*  
 “ obtained so much advantage, that he walk-  
 “ ed about with a cane, favouring that leg.  
 “ On catching cold, he had afterwards minding  
 “ of his illness again; but, by visiting this place  
 “ once or twice more, he recovered perfectly.”

2. “ Colonel Mildmay’s case was more pain-  
 “ ful, and more inveterate. By bathing, he  
 “ recovered.”

3. “ Sir John Clöbery had been a colonel in  
 “ *Scotland*, under *Monk*. By great fatigues,  
 “ and being frequently obliged to sleep on the  
 “ ground, he was seized with aches and pains  
 “ in his limbs, of which he recovered. By lay-  
 “ ing

“ ing in damp sheets, he was seized with a tormenting fit of a *Sciatica*, which held him two years, and crippled him.

“ He went through various regimens in London, all to no purpose. After being bled, and purged, he bathed, and pumped for six or eight weeks, at the end of which he went away, not much advantaged for the present; but, after two or three months, was well at ease, upright, and streight.”

4. “ Mrs. Boswel, newly married, aged about twenty, was contracted, and crippled by a *sciatica*, so that she could neither stand upright, nor lay streight. She was carried in arms, not without frequent complaints of twinging pains.

“ She had tried all sorts of remedies, internal and external, without benefit. By two months bathing and pumping she mended considerably, insomuch that she could leave off her opiate which she took twice or thrice a day to the quantity of 30 or 40 drops at a time. Whether it was by the violence of her pain, or the too frequent use of these stupefactive medicines, or former inclination to hysterics, she had often very violent ones, not much short of *epileptic fits*.

“ She bathed, and pumped, and thus recovered considerably the first season. Next year, she returned, and completed her cure.”

Among Guidot's 200 *Cases* there are 14 *Sciatics*, a specimen of which are the following.

5. “ Benjamin Barber, Alderman of Bath, was cured by bathing, and pumping.”

6. “ Robert Sheyler was cured by three bathings.”

7. “ Mr. Thomas Wilkins was cured by bathing four times, and pumping twice.”

## CHAP. VII.

## Of CUTANEOUS DISEASES.

**I**N *Skin Diseases* Baths natural and artificial have been used in all ages, and in all countries. In his book (*De Thermis*, pag. 122.) Baccius expresses himself, *Maculas autem pruritus, ulcuscula, scabies, lepras, papulas, et id genus alia per cutim vulgo manantia vitia, tum crebrae medicatarum potiones exterminant, tum abluunt, abolentque in totum abstergentium et calidarum quarumcunque lotiones. In universum, minerales aquae omnes, omnes salsae ac marinae ad omnigena cutis faciunt vitia.*

## I. Of the LEPROSY.

*Definition.* 1. LEPROSY, or Elephantiasis, is a cuticular disease appearing in the form of dry, white, thin, scurfy scales.

*Diagnosis.* 2. Its diagnostic signs are itching with scales generally confined to the cuticle. Sometimes, it goes deeper, and appears in the form of deep ulcers.

*Prognostic.* 3. This disease is generally hard to cure, especially if it is hereditary.

*Cure.* In this and other inveterate diseases of the skin, Bathing has successfully been used in all ages. Baccius (pag. 122) expresses himself thus. *Elephantiasis autem et quam dicunt Leporam, nec minus omni intemperatae, ac veteri scabiei, fortiora in cunctis conveniunt balnea, omnes terrae minerales, sulphureosae praesertim, quales in Lutationibus commemorantur multae.* The Well Callirhoe, and the river Jordan, are said, in sacred writ, to have cured *Leprosies*. Paulus



Aegineta commends natural baths in the cure of Leprosies, *praesertim aluminosarum, et quae ferum sapiunt. Consert ipsarum potio, tum marinae barenæ usus, et quaecunque tandem sudationibus ciendis efficaciam habent, Vaporaria ac Discussoria.*

Dr. Pierce (in his *Bath-Memoirs*) expresses himself thus. "For more than forty years that I have lived here, there hath not one past <sup>General</sup> wherein there hath not been more than a few <sup>proofs.</sup> instances of very great cures done upon leprous, scurvy, and scabby persons. The virtue of the waters is so well known in leprous cases, that it seems almost superfluous to bring many examples. However, that this head may not be without its particular instances, I shall give some few eminent ones.

1. "Thomas St. Lawrence, Esquire, of *Ireland*, <sup>Cases.</sup> aged fifteen or sixteen, was sent hither in May, 1679. For seven years past, he had been afflicted with a perverse *scab* tending to a *leprosy*, which had yielded to no medicine. By my advice he was bled and purged four times, took alteratives, drank the waters, bathed and recovered."

2. "A poor fellow from *Warwick-shire* came hither in the year 1684. I never saw any one come nearer to the description of a *leper* in the *Leviticus* than this man. By drinking, and bathing in the *Lepers-bath* he was perfectly recovered."

3. "A Woodmonger of *Staines* brought his son hither aged about twelve or thirteen, who, from his infancy, was subject to the *Vitelligo*. Sometimes it was more, then less, in greater or lesser blotches on his neck, elbow, knees, face, head, arms, and thighs, with a brawny white scurf which fell off and grew again. Af-

"ter

## DISEASES CURED

“ter a month’s bathing and drinking, the spots  
 “rose not so much. But, as the disease had  
 “been born with him, I advised his father to  
 “put him to school here. I could not get him  
 “to drink regularly, but he bathed every night,  
 “and sometimes took physic. In a twelve  
 “months time he returned as sound as a trout,  
 “and had been so for some months before he  
 “set out.”

4. FROM Dr. Guidot’s *Bath-Register* we have  
 copied the following *Cases*. “Emanuel Wef-  
 “ton, of *Elsemore* in the County of *Salop*, had  
 “a scurfy head with many scales for five years.  
 “By bathing and washing the head in the Le-  
 “pers-Bath he was cured, June 14th, 1682.”

5. “E. G. daughter of a musician of Bath,  
 “from her birth was troubled with a *scurvy* and  
 “scaly head like an *elephantiasy* or *leprosy*. By  
 “the use of the Kings Bath, and application of  
 “the mud, with some externals, she had a  
 “sound head, and thick hair. This I saw No-  
 “vember 5, 1685.”

6. “Dorothy Rossington having scales fall-  
 “ing from all her body especially in the morn-  
 “ing, by using the Kings and Queens Baths six  
 “months received cure.”

7. “Richard Vernon, aged fourteen, was  
 “for ten years, troubled with a milder sort of  
 “*leprosy*, called an *elephantiasy*, with tawny  
 “spots, and white scales. He drank the wa-  
 “ter seven days, and bathed three weeks, by  
 “which he recovered. The winter following,  
 “the disease broke forth. After eight weeks  
 “pursuit of the same method, he went away  
 “well. Father and son gave testimony, June  
 “6, 1689.”

8. “Henry Clempson, shoemaker, came to  
 “Bath

1.  
 seated  
 degen  
 2.

" Bath Whit-monday 1687, used the hot bath  
 " three months. The year following, two months,  
 " gave public thanks to Almighty God, who  
 " cured him of a white dry *leprosy*, called *ele-*  
 " *phantiasy confirmed*, which had miserably af-  
 " flicted him for six years."

9. " I John Burch of the county of *Kent*,  
 " came to Bath April 30, 1691, troubled three  
 " years with a white scurfy skin and head.  
 " Under the scales were reddish spots most com-  
 " monly round. I used the Bath nine weeks,  
 " and acknowledge my cure."

10. " Horthy Harper, a *Leper*, received great  
 " benefit by the Lepers-Bath, 1693."

11. " Elizabeth Smith, a *Leper*, whose skin  
 " was covered over with white scales, went away  
 " clean, 1693."

12. " Sarah Meredith of *Carleen*, received  
 " benefit in an *Elephantiasy* by the Hot-Bath,  
 " 1693."

12. " Howel Morgan, Esquire, of *Merioneth*,  
 " received great benefit in a foul skin resem-  
 " bling an *elephantiasy*, by drinking and bath-  
 " ing, 1693."

13. " Davis, a lodging-house-keeper in *Duke-*  
 " *street*, was my patient for a *leprosy*, with  
 " white scurfy scales of long standing; by bath-  
 " ing and taking *Plummer's* alterative medicine,  
 " he is now well, and has continued so for  
 " ten years past."

## II. Of the SCROPHULA.

1. SCROPHULA is an indolent schirrous tumor, *Definition.*  
 seated, chiefly in the glands of the neck, and  
 degenerating into ulcers of the worst sort.

2. Its chief seat is the glandular system in ge- *Seat.*  
 neral,

neral, not the only, for it occupies the adipose membrane, muscles, tendons, joints, and bones.

3. Particular nations are infested with it, viz. the *Bavarians, Dutch, and the Tyroleze*. Of these children, persons grown up rarely.

4. Its remote causes are crude, viscid, acid diet, foggy air, preceding diseases, pox, snow water, but, above all, hereditary taint, sometimes from the nurse. It is very difficult to be cured. *Scrophulas subnascentes abolere balneum item in Baianis et digerentia, et gallida alia diutissime fota, ut nitrata calentia, ac item ebibita, quales placuit Vitruvio celebrare Subcutilas aquas in Sabinis, pariterque fomenta ex bituminosis, ferreis, plumbeis, et ex brassica paratum in Discussoriis artificialibus*, says Baccius, pag. 122.

Cases.

1. FROM Pierce's *Memoirs*, we have these Cases. " Lord James Butler came to Bath " June 1677, with a surgeon to dress his " wound, which was upon the last joint of one " of his thumbs. It was judged to be scrophulous. He drank the water mostly, sometimes bathed. That hand he bathed morning and evening at home. After five or six weeks, the wound afforded a more laudable quittance, which gave him encouragement to return another season, which he did, and was cured."

2. " A son of Monsieur Du Puys, servant to " James Duke of York, had a running sore " on his hand, which yielded to no surgery. It " was therefore deemed *scrophulous*. He had " been touched more than once, to no purpose. He drank the waters, and bathed, " took *vulneraries* and other alteratives. In two " seasons he was cured."

3. FROM



## BY BATH WATER.

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3. FROM Guidot's Register we have the following. "Francis Loughton, of the parish of *St. Mark Nottingham*, came to Bath, May 5, 1684, "with two running sores, one in the leg, another in the thigh. On the use of the Lepers-bath for two months, the ulcers healed, there remained only some crookedness."

4. "Edward Huddle, of *Cheesham*, came to Bath with running ulcers all over his body. After great expences, and despair of cure, he used the Bath six weeks, and drank sparingly. His ulcers healed, he went away well, *September*, 1688."

5. "Margeret Geary, of the County of *Aberdeen*, troubled with lameness and running ulcers in both knees and left shoulder for three years, by the use of hot bath received cure, August 17, 1682."

The only publication of *Hospital Cases* is one six-penny number, by Dr. Oliver, containing *fourteen*. Had this gentleman's practice been as distinctly related in the books from the beginning, they would have contained clear proofs of the power of the waters. His first begins only in the year 1757. Among the fourteen, we find no less than *six* manifest proofs of the power of the waters, in one of the most loathsome disorders, a *Leprosy*.

In that Account of eighteen years hospital-practice published this year, we find one article stand thus, *Leprosies, and foul eruptions of the skin*. Under this general head, there were 659 admitted; of this number 268 were *cured*, and 315 *much better*, an unquestionable proof of the power of the waters.—"From this account, indistinct as it is, and from the relations of other writers, we may venture to conclude that, in this article, there is great matter of  
" com-

## DISEASES CURED

"comfort to those who languish under *leprosy*,  
*" scrophulas, scurvy, running-sores, &c."*

In his *Principia Medicinæ*, pag. 201, Dr. Home recommends *ferrum et aquæ chalybeatæ, sulphur aquæ sulphuratæ, imprimis Moffatenses nostræ*. The virtues of Moffat Wells, (in scrophulous cases) are confirmed in the *Edin. Med. Essays*, as well as by northern experience.

## III. Of the SCURVY.

1. So various, numerous, and discordant are the symptoms of the *scurvy*, that hardly can it be defined; it nevertheless appears to be a disease specific and distinct from all others. Its distinctions seem rather to arise from different constitutions, than from different causes. It seems to have been known to the ancients; tho' by reason of their short winters, and coasting voyages, it raged not so fiercely as with us. For more than a century past, the scurvy seems to have been the bane of our armies, and fleets.

2. Boerhaave, and Hoffman seem to agree in assigning one immediate cause of scurvy, viz. the separation of the serous part of the blood from the crassamentum. With submission to names truly respectable, these are, at best, indefinite hypothetic notions. In scorbutic putrefscencies, the crassamentum does not continue thick and viscid, it is fused, together with the serum into one homogeneous mass; the septic particles are intangled in the grumous, as appears by Dr. Pringle's Experiment 42, Of *Septics* and *Antiseptics*. Dissections verify this in every day. This was the case in *Commodore Anson's Voyage*. From whatever part of the body

the

the blood was discharged, the crassamentum was always found to be dissolved, there was no separation.

In Dr. Grainger's account of that scurvy which raged at *Fort-William*, the author judiciously makes this declaration. " Warned by former mistake, I never used the *lancet*, unless the patient was uncommonly plethoric, and then a very small quantity of blood answered the purpose. I have seen fellows who have often borne the loss of twenty ounces faint away, at this time, with the loss of six. On standing, it did not separate, but appeared like the blood in malignant fevers, altogether dissolved, and of a livid colour."

Mr. Morgan, Surgeon to one of the regiments at *Guardaloupe* (among several other curious remarks on the reigning diseases of that island) imparted some which determine the point. After laying it down as a preliminary, that the distempers which chiefly raged among the troops seemed to have the scurvy for their leaven, he judiciously remarks, " That in the malignant *Yellow-fever* which generally attack'd the strong and healthy, the eyes look red, the pulse is full but not quick, and, in the worst symptoms, the blood issues forth from every emunctory, respiration labours with intolerable anxiety. If, on opening a vein, the blood appears of a bright red colour as if coming from an artery, and the patient soon faints, it is a certain sign of an intire solution of the blood. The vein ought to be stopped immediately, otherwise oppression, anxiety, and all the deadly symptoms hasten, especially if the patient has been known to complain one or two days before he was brought to the hospital.

Y

" In

"In short, few or none whose blood is in this state, recover."

Sea and  
land scur-  
vies the  
same.

3. PREJUDICE has established a distinction between sea-scurvies, and land-scurvies. If we compare the pathognomonic signs of Echthius, Wierus, and others, we shall find them quadrate exactly with the narrative of Anson's voyage. Putrid gums, swelled legs, rigid tendons, hæmorrhages, sudden deaths, &c. are symptoms described by seamen and landmen. Its symptoms are uniformly the same at sea, in *Holland*, *Greenland*, *Hungary*, *Cronstadt*, *Wiburg*, in the *Orkneys*, and at *Penzance*.

Cutaneous eruptions of all sorts have usurped the epithet *Scorbutic*, a term introduced to cover the indolence, or ignorance of practitioners, who call every symptom scorbutic or nervous, that baffles their unavailing attempts. The ancients were at as much pains to distinguish the different diseases of the skin, as the moderns have been to confound them. Medical improvement can only be expected from histories accurately and distinctly related. Vague, indefinite and general descriptions afford neither consolation to the patient, nor experience to the physician. In the first publication of the Bath-Hospital practice, one of the articles stands thus *Leprosies, and foul eruptions of the skin!* Misled by general definitions, thousands of the Imperialists perished for want of assistance, as appears by Kramer's Epistle to the Royal College of Physicians at *Vienna*. His consultatory Letter addressed to the College, begins thus, "The calamity which afflicts the Imperial troops is not the species of scurvy described by *Eugalenus* and others. It is not infectious. It is not primary but secondary. It is not attended with the many symptoms described by those authors" &c.



"&c." Pringle (in his *Observations on the Diseases of the army*) remarks, that (in the real scurvy) there happens a general resolution, or putrefaction of the whole frame, with livid spots not commonly scorbutic, or rising above the surface of the skin. In marshy parts of the *Low Countries*, where the true scurvy is most frequent, the *Iicb* is a distemper unknown. The *scabies*, *impetigo*, and *leprosy*, are diseases different from the *scurvy*.

4. VARIOUS have been the opinions concerning the *causes* and propagation of this distemper. Some believed it connate, others infectious. E. c, wherever this calamity has been general, it may be deduced from natural causes. When it raged with singular devastation among the Imperial troops in *Hungary*, Kramer was surprised to find not even a subaltern in the number. At sea, even the petty officers are seldom infected. There are proofs innumerable of people drinking out of the same cups, and laying in the same bed, without infection. Dissections of the most putrid bodies did not produce such effects, *Memoires de l'Acad.* 1699, pag. 237.

Where the *causes* are general, it becomes *epidemic*, and rages with violence; as happens in long voyages and towns long besieged, to the Saxon garrison in *Thorn*, the besieged in *Rochebelle*, as also at *Stetin*, and, at other times, to whole countries, as in *Brabant* in the 1556, and in *Holland* 1562.

Where the causes are fixed, and permanent, *Endemic*. it may there be said to be *endemic*, as in *Iceland*, *Greenland*, *Cronstadt*, *Russia*.

Where these causes are accidental, it may *Sporadic*. there be said to be *sporadic*; as sometimes in *Britain*, *Ireland*, and some parts of *Germany*.

*Moisture.*

Moisture is the parent of corruption. From the days of Hippocrates to the present, moist warm air has been known to produce malignant, putrid diseases. Moisture joined to cold is (by universal consent) the parent of scorbutic corruption, at land as well as sea.

From Sanctorian Experiments confirmed by De Gorter, Keil, Lining, Rye, and many more, we know that *Cold* constricts and corrugates the skin, and thus diminishes perspiration. Rainy weather, wet lodgings, damp beds, and foul linnen add fuel to fire. Moisture relaxes the solids; heat rarifies the fluids. Hence it is, that in countries hot or cold, rainy seasons are unhealthy. On the state of the atmosphere the strength and weakness of our fibres depend. As the state of the atmosphere is more variable in England, than in any other part of the world, we may hence account for the inconsistency of our tempers, and the precariousness of our health. In cloudy foggy days, the members feel heavy, the appetite fails, the pulse creeps, lowness of spirits succeeds. From the sum total of humors retained, fibres relaxed, melancholic thoughts, indigestible food, &c. we can hardly wonder at the appearance of the diagnostic signs of scurvy.

*Symptoms.**First stage*

5 THE first indication of the approach of the scurvy is generally a change of colour to a pale bloated complexion, with a fullness, or listlessness. Mean while the person eats and drinks heartily.

This aversion to motion soon degenerates to universal lassitude, breathlessness, and panting.

The gums become itchy, swell, and are apt to bleed on the least friction. Soon after they appear of an unusual redness, soft and spongy, pu-  
trid

trid and fungous, with stinking breath, the pathognomonic sign of the disease.

The skin feels dry, rough, often shining, covered with reddish, bluish, livid, black spots, resembling extravasation from a bruise, chiefly on the legs and thighs, often on the arms, breast and trunk.

About the ankles, the legs begin to swell, and, at last the whole leg.—These are the appearances of the first stage.

THE Symptoms of the *second stage* are *Ulcers* Second stage. discharging thin fetid sanious bloody matter, with soft spongy flesh. The slightest bruises or wounds degenerate into such ulcers.

Scurvy renews all former complaints, aches, and pains. Scorbutics are liable to be seized with intercurrent or epidemical diseases. If the prevailing distempers happen to be of a putrid nature, by co-operating with scorbutic acrimony, they produce fatal symptoms.

Scorbutics are rather lax. Their stools are generally fetid. Their urine, by standing, gathers an oily saline scum a top, it is generally high coloured, and soon becomes rank and fetid. The pulse is generally slower and feebler than in health. Scurvy is rarely attended with fever.

Stiffness of the tendons and flexors appears early, with languors and faintings on the least motion. Some have their legs much swelled with large livid spots; others have them indurated and painful.

Haemorrhages proceed from the gums, guts, lungs, and ulcers. The teeth loosen, and the jaws become carious. While they rest in their beds, scorbutics generally make no complaint either of pain or sickness, they have a good appetite, their senses are entire, tho' they are generally sullen, melancholy, and low-spirited.

## DISEASES CURED

IN the *last stage* it is that all the former symptoms put on their virulent aspect. Old scars open, swelled limbs burst, and profuse hæmorrhages ensue. Obstructions, jaundice, dropsy, colics, constipations, dyspnæas, and despondency close the scorbutic catastrophe.

6. NUMEROUS, various, and discordant are the scorbutic records. Practitioners stuck to the notions which they first imbibed; as were their prejudices, such was their practice. Is it any wonder that the scurvy was confounded, and ill cured? There are collections of writings on the plague. On the subject of the venereal disease, Astruc has presented a pattern. May not this be one reason, why this disease begins to lose its sting? The most complete performance of this sort of writing is that on the *scurvy*, by James Lind, M. D. C. R. M. E. S. After a regular medical education, this gentleman served, last war, as surgeon in the navy. After the peace, he practised physic at Edinburgh, where, to his own observations, he added the marrow of every author who had ever treated the subject of the scurvy. Commiserating the fate of those who defend our wooden walls, he has treated his subject with accuracy, perspicuity, and judgment. During this war, he has served as physician to the naval hospital at *Hastar*, from which he dates the following letter fraught with observations practical and useful.

Scorbutic  
Spots.

“ Soon after the second edition of my book  
“ on the *scurvy* was printed, I was appointed  
“ Physician to this hospital, where I have been  
“ for some years, daily conversant with scorbutic  
“ patients, and frequently visited to the  
“ number of 3 or 400 in a day. In a situation  
“ so singularly advantageous for resolving all  
“ doubt



"doubts which might possibly occur by in-  
 "specting living, as well as dead bodies, I have  
 "taken uncommon pains to ascertain the true na-  
 "ture, causes, symptoms, appearances, and cure  
 "of a malady so afflicting, by various repeated  
 "experiments, dissections, and medicines of  
 "all sorts. The result of which is, that I have,  
 "no-wise, altered my opinion in regard to  
 "practical doctrines, but, I have not found so  
 "constant and general a state of putrefaction  
 "in the bowels of scorbutic patients, as I was  
 "mistaken to believe by the dissections of others.  
 "My sentiments are changed only in respect to  
 "some theoretical points.

"I have enclosed a description of all the dif-  
 "ferent cutaneous scorbutic eruptions observed  
 "in more than a thousand patients, which may  
 "perhaps be of use to you in your practice at  
 "*Bath*, and in your present laudable undertak-  
 "ing. My blotting indicates my inattention;  
 "nor can I answer for the accuracy of the tran-  
 "scriber. Let my desire of speedy compli-  
 "ance with your request, plead excuse. Your  
 "discernment will easily distinguish between  
 "errors and blunders."

Feb. 11, 1762.

## I.

"Outward appearances may be divided into *Smooth*  
 "such as are even with the skin, and such as *spots*.  
 "are raised above it.

1. "Of the first are those which may, not im-  
 "properly, be called *Petechial*, humorous small  
 "distinct round spots of blood of various co-  
 "lours, from red to livid, sometimes black.  
 "The skin feels rough.

2. "There are large livid marks or blotches  
 "of all the intermediate colours between red  
 "and deep black, sometimes yellowish.

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“ Mistakes may be made in regard to these  
 “ stains; for, sometimes the red dye is very  
 “ slight; as there may be only a few faint red  
 “ or purple streaks just perceptible on the  
 “ thighs, legs, or ancles, which may be mis-  
 “ taken for the production of another disease.

“ Or, what may be a more dangerous error,  
 “ when a great part of a limb becomes red, this  
 “ is taken for an *Erysipilas*, or true inflamma-  
 “ tion. The marks of distinction are less pain  
 “ and heat in the scorbutic red blotch; it in-  
 “ clines also to a livid dusky dye. In an ery-  
 “ sepilas, it is always of a brighter red, and at-  
 “ tended with great heat and more acute pain  
 “ to the touch,

3. “ In the scurvy, the parts are sometimes  
 “ quite black. This black is sometimes injudi-  
 “ ciously taken for mortification. I have seen  
 “ a leg put on the following appearances.  
 “ The fore part was of a shining red colour,  
 “ like a true inflammation, but of a darker  
 “ hue, in the middle of which were broad spots,  
 “ quite black; in one or two places there were  
 “ small ichorous bladders. The margin was of  
 “ a lemon colour. Even in such dismal scorbu-  
 “ tic appearances, I never saw a true mortifica-  
 “ tion ensue where there was not some highly  
 “ virulent putrid ulceration. Nay, I believe a  
 “ mortification or suppuration of such echymo-  
 “ sis's is very rare.

4. “ There are hard broad blotches always  
 “ of a dark, livid, or faint reddish colour re-  
 “ sembling that description given by authors  
 “ of *Plague-bills*. These are to be seen on the  
 “ thighs, legs, arms, &c. distinct and similar,  
 “ often very numerous. These are hard as stones.  
 “ Their size is from that of a six-pence to half a

“ crown

" crown piece. To the eye, they appear prominent, but they are not.

## II.

Of prominent appearances, I have observed *Prominent.* divers.

1. " The miliary are more florid than the anserine, and also thicker. These infest the legs and thighs. Dying away, they put on the true white anserine appearance; as they wither off they frequently leave a red speck behind. Sometimes they are black, like grains of powder blowen into the flesh, at other times, of a purple colour. These feel very rough to the touch. To the eye they appear very thick, and much elevated. They may be perceived on the surface of the black stains, and are often intermingled with the small pecthial spots. In some, they resemble elevated spots of blood; but never bleed, not even when rubbed.

2. " In other patients, though seldom, the legs and thighs are overspread with large spots of a darkish, or livid colour, of the size of half a crown piece, with a tawny coloured eschar, or hard blackish film on the top. These exactly resemble a wound or ulcer badly healed, with its cicatrix ready to fall off. These infest the legs and thighs. The black eschar or scurf is, at first, thin, it becomes thicker, and then drops off, leaving a large hard purple blotch. A serous humor sometimes issues from underneath the scab, before it falls off, but these blotches seldom, or never degenerate into ulcers.

" Sometimes the skin looks as if it was affected with a dry black leprosy. This appearance differs from the livid blotches formerly

" merely

## DISEASES CURED

merly mentioned, by having always a loose film or scab on the top.

3. " On the trunk, and even on the face, also on the legs, there often appear black or livid rough marks resembling the stigmata left after the small pox, or a withered pimple of that size. When they scale off, they leave a blackish speck, as if the patient was afflicted with a black leprous disorder. They are as large as a six-penny piece.

4. " In a few hours sometimes there arise hard bumps, generally of a whitish colour, at times streaked reddish, blackish, or yellowish. These infest the backs of the hands, shins, arms, &c."

5. " Some, though rarely, after getting better, have an eruption of numerous small pimples containing matter or pus, with others dry on the face and head, different from those of the scurvy.

" I have seen patients labouring under leprous disorders both of the moist and dry sort, as also of the white and black kind, attacked with the true scurvy. In such complicated cases, the leprous and scorbutic spots appeared distinct. The scurvy cured left the leprous scabs as before.

State of  
the viscera.

" ON opening an uncommon number of bodies, I have not found that general state of putrefaction mentioned by authors. Once, or twice, I found the *spleen* quite rotten. In others dead of scorbutic fluxes, I found part of the *guts*, especially the *colon*, affected with a gangrenous taint. Otherwise, I found all the bowels, for the most part, sound. The most common appearances, though not constant, are the same red or livid spots on the *epiploon*, *mesentery*, *stomach*, but especially the

" guts,



“ guts, as on the skin. An inattentive dissector might be led to think that these spots were so many mortifications. On examination, I found them firm and sound in texture, and free from putrid taint.”

*Philosophical Transactions Abridg. Vol. VI. Part 3, Chap. 2,* and, in a book called *Traité de la Peste, Partie I.* we have uncommon enlargements of the *heart* and *liver* in dissections of bodies dead of the *plague* at *Marseilles*, by M. Didier, Physician to his Most Christian Majesty.

Eugalenus takes notice that the *liver* and *spleen* were often so much enlarged that the tumor could be seen outwardly.

Mr. Ives, and Mr. Thomas, successive surgeons of the *Naval Hospital* at *Bengal*, kept a column in their books for diseased livers, almost all the offspring of *scurvy*. Many swelled, and broke outwardly, all which recovered. Those which swelled, and suppurated inwardly, all died.

For this preternatural increase of the viscera in putrid diseases, Dr. Pringle (in his course of *Septics*, and *Antiseptics*) rationally thus accounts. “ As all the humors become thinner by putrefaction, so the solid or fibrous parts of animal bodies are relaxed, or rendered more tender by the same process. This observation requires no experiments to confirm it. This seems to be the truest cause of diseases depending on weak and lax fibres, as it appears in malignant fevers, and in true sea and marsh scurvies. From this circumstance we are enabled to account for the extraordinary bulk of the heart, liver, and spleen, incident to these diseases. For, if we suppose the natural growth stopped by the rigidity of the fibres ballancing the distending force of the blood,

“ it

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“ it will follow, that, whenever the fibres are  
 “ preternaturally softened, the increase of these  
 “ parts will begin anew. This supposition I  
 “ owe to the ingenious Dr. Simson, M. P. in  
 “ the University of *St. Andrews*.”

For the general prophylaxis, and cure of *scurvy*, the reader may consult Dr. Lind's respective chapters. My subject naturally leads me to scurvy as they particularly fall under the power of mineral waters. Sufficient it is, in general, to observe, that the blood is neither acid nor alkaline; that, in their operations, acids differ, the same is the case with alkalies; vegetable acids differ from mineral; fermented from unfermented. Volatile and fixed alkalies differ also in their effects. In hot putrid scurvy, cresses, onions, mustard, and radishes prove serviceable. In the very same scurvy, acids, fruits, and herbs cure every day. No wonder, they are both antiseptic. No longer are putrid and alkaline substances synonymous. For this discovery we are obliged to Pringle. What shall we now say of our boasted antalkalies? *Chymia egregia medicinae ancilla, non alia peior domina.*

*Pains gouty, scorbutic, and rheumatic.* THERE are wandering pains which usurp the mask of *gout*, *rheumatism*, and *scurvy*, and which are often complications of the three.

The matter is of a volatile phlogistic nature, it passes sometimes like electricity through the whole body, darting pains, convulsions, twitchings, and cramps; especially when the patient is falling asleep, sometimes fixing with redness, inflammation and pain; but, in a few minutes, the joints grow pale, and easy, the spirits flag, he becomes hypochondriac, the appetite fails, digestion is imperfect, flatus's prevail, the flesh wastes, nervous atrophy succeeds.

Syden-

Sydenham says, " Though there is remarkable difference between the true *rheumatism*, and the *scurvy*, as intimated above, it must nevertheless be owned that there is another species of rheumatism which is near a-kin to the scurvy; for it resembles it in its capital symptoms, and requires the same method of cure nearly. The pain affects sometimes one part, sometimes another, but rarely occasions swelling, nor is it attended with fever. It is also less fixed, sometimes it attacks the internal parts, with sickness. It is of long duration. It chiefly attacks the female sex, or the effeminate, so that I should have referred it to the hysteric class, had not repeated experience taught me that it will not yield to hysteric remedies."

Boerhaave, who has extracted his chapter of rheumatic aphorisms from the former, says (Aph. 1490) *Arthritidi, podagrae, scorbutoque agnatus morbus frequentissimus, qui rheumatismus appellatur*, A disease a-kin to the *gout* and *scurvy*, called a rheumatism. In this *Proteus* of a disease, they both recommend perseverance in the use of *antiscorbutic juices*.

Hoffman also observes " That there is a *scorbutic rheumatism*, in which the whole mass of lymph and serum is vitiated with foul particles which manifest themselves by different kinds of eruptions.

" These proceed from unwholesome, hard, salt diet, idle sedentary life, the common use of a heavy vapid air, and long continued grief.

" Diluent and demulcent remedies taken freely, and continued long, are chiefly proper here. *Mineral waters*, and milk with a proper regimen, are likewise of great efficacy in curing this species of the disease."

Paulus

Proofs a-  
nalogical.

Paulus Paravicinus, (*De Balneis Mafidi*) says, *Quantum vero arthriticis, ischiadicis, convulsis, distentis, resolutis, tremulis, nervicis que omnibus subveniant, exprimere non facile possim. Ob hæc autem corporis vitia potissime celebres sunt, et omnium ore versantur.*—"Andreas Calvus municeps meus hujus rei testis est locupletissimus, cui post molestissimos coxendicis dolores, femur adeo riguerat, concretis cum gelu musculis, ut nullum medicamenti genus præter balnea hæc sensum excitare potuerit."

Cases.

1. The first case of Dr. Pierce's *Bath Memoirs*, and of his own practice, that falls under this head, happens to be his own.—"I had sometimes a pain in my right hip, thigh, knee, and ankle, which soon moved to my shoulder and arm, in both so acute, as to render them, for some time, useless. I had also a dull heavy pain in my legs with a little swelling and small spots.

"After due preparation, I bathed spring and fall. I used a decoction of *Cbina*, *Sarsa* with *Cephalics*, *Neurotics*, *Antiscorbutics*, &c. I used the waters only in, and after bathing, so as to quench thirst, because I was subject to rheums, and catarrhs. By God's blessing, Bath waters, regimen, and exercise, I now continue so well in the 74th year of my age, that I have neither gout, stone, dropsy, cough, asthma, nor any remainder of the *scurvy*, but want of teeth."

2. "Mrs. Jane Chase, a maiden gentlewoman, aged about 24 years, was taken with sharp pains in her joints only, which ran from place to place by quick removes, sometimes inflaming, then swelling, always painful. She was so weak that she could not stand. She had a spontaneous lassitude, want of appetite, digestion, palpitation, &c.

"After



“ After convenient preparation she bathed;  
 “ and, in bathing, we were obliged to support  
 “ her with cordials, for, at first, she could not  
 “ bear a temperate bath more than twice a  
 “ week, for she was brought hither in a litter.

“ In two months time, she recovered strength,  
 “ and digestion, the tumors of her joints began  
 “ to subside, the palpitation remitted. She  
 “ went home on horse-back, and continued the  
 “ autumn and winter following, free from a re-  
 “ lapse. She drank the waters no otherwise  
 “ than to quench her thirst in the bath, and  
 “ sometimes to keep her soluble. She conti-  
 “ nued many years free from this painful di-  
 “ stemper.”

3. “ Mrs. Green of *Stratford upon Avon*, aged  
 “ 40 years, had a wandering scorbutic gout and  
 “ rheumatism twenty years before, of which  
 “ she recovered, and married. It now return-  
 “ ed, and tortured her at first between the  
 “ shoulders, so that, on the least motion, she  
 “ was ready to faint away. By outward ap-  
 “ plications, it moved to her limbs, hips,  
 “ knees, and soles of her feet, which crip-  
 “ pled her.

“ After various regimens, she was brought to  
 “ Bath. After slight preparation, she was put  
 “ into the *Cross-Bath*, the most temperate. Thus,  
 “ continuing to drink and bathe by turns, for  
 “ five or six weeks, she returned well.”

4. “ Mrs. Martha Greswold of *Saly-hill* in  
 “ Warwickshire, at 13 years of age, by lying  
 “ on the ground, in, or soon after a *scarlet*  
 “ fever, was taken with a *rheumatism*, which  
 “ left a stiffness in her joints, and other symp-  
 “ toms. When she came to Bath, she was 23  
 “ years old, so weak, as not able to use hand,  
 “ or foot. Her head was also affected, so that  
 “ she

“ she could hardly remember what was said  
“ to her.

“ After a week’s gentle preparation, she bath-  
“ ed, and pumped for seven weeks, at the end  
“ of which, she rode forty miles homeward the  
“ first day. She kept well for ten years. Since  
“ that she has had severe fits of the *gout*, with  
“ distortions, and nodes, for which she has  
“ often come hither; and, by drinking, and  
“ bathing, has always received benefit.”

5. “ Mrs. Mary Huntly unmarried, aged  
“ about 30, in much the same case with Mrs.  
“ Chase, she had besides *beats*, and *pimples* in  
“ her face, *cough*, and *shortness of breathing*, she  
“ was also greatly obstructed.

“ She required more preparation, but by  
“ shorter space of *bathing* she recovered.”

Dr. Pierce concludes his section of *wandering  
pains* in these words. “ Many more instances  
“ might be given. Of late these kind of ill-  
“ nesses have gone under the name of *rheuma-  
“ tisms*; but call them what they will, all pains,  
“ and weakness remaining after this, or the  
“ *gout*, have certainly been recovered by mo-  
“ derate and regular *bathing*, and relapses  
“ have been prevented by *drinking*.”

6. Dr. Guidot (in his *Bath-Register*) gives the  
following Cases. “ Joseph Pleydal, Archdea-  
“ con of *Chichester*, drank the waters in the morn-  
“ ing, and bathed at night for *rheumatic af-  
“ fections*, and full habit of body. By the use  
“ of the *Cross-Bath*, he received great benefit.”

7. “ A matron of *Devonshire*, in an invete-  
“ rate *rheumatism*, using the *Cross-Bath*, receiv-  
“ ed benefit.”

8. “ William Dixie Esquire, of the county  
“ of *Leicester*, was sadly afflicted with a *rheuma-  
“ tism*, which reduced him to that degree of  
“ weak-

## BY BATH WATER.

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“weakness, that, at 22 years of age, he seemed an old decrepid man on crutches. After the best advice that London afforded, he came to Bath rather in despair. After using the *Cross-Bath* two months, and the *pump* about one, he recovered, and gave public thanks to God in the *Abbey-Church*.”

9. “Mr. Edward Pierce (from hard lying during the late troubles of *Ireland*) was afflicted with the *rheumatism* all over, which, at last, deprived him of the use of his right arm. By drinking, and bathing in the *King's* and *Queen's Baths*, he received great benefit.”

10. “Mr. Yorath, chaplain to Morgan of *Tredegar*, received great benefit in a *scorbutic atrophy* by drinking and bathing.”

11. “Mr. Abram Corea of London received great benefit in a *scorbutic rheumatism* by drinking, and bathing.”

12. “Sir Ambrose Phillips, Knight, received cure of a *rheumatism*, by drinking, and bathing.”

13. “Edward Washbeare of London, 62 years of age, came to Bath creeping on his hands, and knees, and having the benefit of *Bellot's Hospital*, used the *Hot-Bath* six weeks, pumped in the Bath, and drank the waters.

“In seven weeks, he walked on crutches; and perfectly recovered. I saw him, strong, erect, and found in London on the third of March 1694, when he gave this testimony of his cure.”

14. Dr. Guidot relates the following Cases. “Mrs. E. Y. of London troubled with pustulous eruptions all over her body, by bathing, and drinking received cure.”

Z

15. “An-

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15. " Another gentlewoman having a sore running head with a briny matter, in five weeks time, received cure by drinking and pumping."

16. " Charles Child *Apothecary* of Bath, having salt and acid humors defluxing with pain in the leg and foot, received cure by bathing ten or twelve times."

17. " John Worley, *Vintner* in *Clare Market*, troubled with the scurvy, and ill disposition of blood, whence eruptions of the skin, and hard bumps like the stinging of nettles, drank the waters three weeks, from seven to nine pints a day, after seven baths he was freed from his distemper."

18. " Henry Johnson, a *Dane*, with old sores, and running ulcers in the legs, hands, and face, received cure by the Bath in two seasons."

19. " Samuel Bret of *Cornwall*, came to Bath with a foul skin, used the Baths fourteen days, and received cure."

20. " Mr. Richard Yorath, Clerk, received great benefit in a scorbutic atrophy by drinking the waters."

21. " Mrs. Woodcock, in a high scorbutic distemper much discolouring the skin, by drinking and bathing for several seasons received much benefit"

22. " Mrs. Cole of *Barnstaple* (in the spleen and scurvy) received great benefit by drinking and bathing for several seasons.

In his *Use and Abuse of warm-bathing*, Dr. Oliver presents us with a memorable proof.

23. " Mrs. Reynolds, wife to the bishop of *Londonderry*, was naturally of a very thin habit of body, and very subject to gouty-rheumatic complaints, she was about 30. When I



“saw her, she was reduced to a skeleton, by  
 “most excruciating pains. She had been bled  
 “largely, her blood nevertheless continued to  
 “be very fizy. The muscles of her throat  
 “were so affected, that she could not swallow,  
 “or breathe without difficulty. The scarf-skin  
 “was dry, hard, and drawn tight over her  
 “whole body. I put her in the Queen’s Bath,  
 “where she staid only a few minutes, ap-  
 “prehending danger from her extreme weak-  
 “ness. Soon after she got into the water, she  
 “felt her pains so much abated, and her throat  
 “so much relieved, that she begged leave to  
 “stay half an hour. On changing the flannel,  
 “the old scarf-skin was found cracked in many  
 “places. After a few bathings, it peeled off  
 “in large flakes, thicker than the true skin  
 “in its natural state. The fluids passed freely,  
 “the body plumped, the skin became soft, and  
 “moist. Universal ease ensued.”

24. “Mrs. Phelps of *Cote* near *Bristol*, for a  
 “year and a half and upwards, laboured under a  
 “complication of ailments scorbutic, rheumatic,  
 “and gouty. She had wandering pains, bilious  
 “vomittings, diarrhæas, legs swelled and hard,  
 “with sores unconquerable by surgical art,  
 “she was bloated, unwieldy, breathless, with-  
 “out appetite, sleep, or digestion. In a word  
 “she was thoroughly cachectic.

“In the beginning of winter, she was, with  
 “difficulty, transported to Bath. After drink-  
 “ing the waters five months, her complaints,  
 “in general, began to yield. She then began  
 “to bathe, which she did but seldom. Her  
 “pains are now rare, so are her vomittings,  
 “and loosenesses; the swelling and hardness  
 “of her legs are gone, the running sores have  
 “long been cicatrized, she eats, sleeps, and

“ digests. To Bath-water, little assisted by medicine, she owes a cure which distant art, in vain, attempted.”

## C H A P. VIII.

## Of the P A L S Y.

*Preamble.* **I**F ever there was a disease hid from mortal eyes, it surely may be said to be that which now employs my pen. Reason we may, but we see little, we know not what to think: yet, of all the diseases which frequent Bath, palsies are the most numerous. Here paralytics have been cured, relieved, and hurried to their long homes. The public has never yet been informed of the *juvantia*, or *laedentia* of Bath waters. There are other diseases which proceed also from laceration of the nerves. This may, perhaps, plead for my present prolixity.

*Definition.* 1. Palsy may be said to be an abolition, or diminution of motion, or sense, or both, in one or more parts of the body. The very word *παράλυσις* imports a solution of that which was before firm. So it is understood, in the gospel according to *St. Luke*, *Nunc solvas famulum tuum Domine*.

*Causes.* 2. The remote causes of palsy are drunkenness; scorbutic diathesis; dry belly-ach; air, cold or moist; wounds of the brain, or spinal marrow; compression, or solution of the nerves; suppression of usual evacuations, apoplexy, convulsion, fear, metallic fumes, touch of the torpedo, pain, dislocation, abscess, opiates, and old age.—The proximate cause is interception of the nervous fluid.

*Symptoms.* 3. The symptoms are evident.

*Diagnos-  
tics.* 4. The diagnostics and prognostics are to be taken from a knowledge of the causes, and ge-  
*Prognos-  
tics.*

neral distribution of the nerves. These differ according to the place, cause, degree, &c. *Inde letbalis, minus letbalis, sanabilis, incurabilis*, Boerhaav. Aphor. 1061. The cause of a paralytic limb may exist in the brain e. g. This requires a method of cure different from that which exists in the crural nerve. The cause may exist in the substance of the nerve, or in the sheath. The latter may easily be cured, the former hardly ever.—Palsy, from fullness of blood, may easier be cured than that which proceeds from a serous colluvies accumulated within the encephalon.—Palsy in the arm may be borne much longer than one in the intestines; because, while the latter continues, the chyle cannot enter the lacteals.—The higher the seat of the palsy, the worse. The brain is the citadel, from which the soul detaches its commands: palsies which succeed violent head-aches impede the very origin of the spinal marrow in its continuation with the medulla oblongata; if these increase, they produce apoplexy. Luxations of the vertebrae of the neck are, for this reason, fatal.—A palsy of the muscles of the face is bad, because these derive their branches from the *fifth pair*; it is, therefore, to be feared, that the cause lives within the encephalon. *Destorsiones in facie, si nulli alteri corporis parti communicent, cito sedantur, vel sponte; reliqui vero apoplectici sunt.* Hippocr. Prorheticor. lib. ii.—If the muscles, which dilate the chest become paralytic, life soon ceases.—The muscles of the throat are so numerous, and so slender, that, when they are affected, Boerhaave pronounces the case *letbalis*.—The heart is a muscle, and may suffer a paralysis. From sudden affections, mortal syncopies have followed. Van Swieten gives an instance, “A

Unfavorable prognosis.

“ nobleman beholding a young man stripped  
 “ of his armour just after he had gloriously  
 “ fallen, had the fatal curiosity to look at his  
 “ face; discovering it to be his own son’s, he  
 “ dropped down dead in an instant.”—“ When  
 “ the small pox raged among the *French Neu-*  
 “ *trals* at *Bristol*, one of the women being in-  
 “ formed that her husband lay, just then, ex-  
 “ piring, walked up to the foot of the matras, and  
 “ gazing earnestly till he fetched his last  
 “ breath, dropped down for ever.” The sto-  
 mach receives its nerves from the two trunks  
 of the *eighth pair*; if a paralyfis happens from  
 an internal cause, it is to be feared, that it  
 lies within the encephalon. If the muscular  
 fibres of the stomach come to be paralysed, the  
 food lies an useless lump, the animal dies of  
 hunger. In gluttons, the muscular fibres, by  
 constant distension, lose their contractile power,  
 the food passes off crude. Hence pains, li-  
 enteries, &c.—The nerves of the intestines  
 have a singular connection with the vital func-  
 tions. If these are wounded, life ceases. Iliac  
 pains sink the stoutest into fits.—The bladder  
 receives branches from the *intercostals*, and from  
 the lower *complexus mesentericus*, as also from  
 the *crural*; hence a paralyfis, from an internal  
 cause, comes to be perilous. Involuntary emis-  
 sion of urine denotes an affection of the brain.—  
 A paralyfis supervening a peripneumony is bad,  
 by reason of the nerves being compressed from  
 blood stagnating in the jugulars.—A paralyfis  
 in a lientery, and a lientery in a palsy are both  
 bad, the *nervi splanchnici* arise from the *eighth*  
*pair*.—A paralyfis complicated with coldness,  
 stupor, or insensibility, is very bad. The blood  
 no longer circulates, the muscles are robbed of  
 their nervous juice. In his Academical Expe-  
 riments



riments on *opium*, Dr. Alston, professor of Mat. Med. in the university of Edinburgh, "showed" his pupils a frog, whose hinder leg was deprived of sense, and motion. Viewing the "paralysed member, we plainly discovered the "red globules dissolved, and the vessels distended with a homogeneous red fluid. This "stagnation was the effect of the opium, which "prevented the depletion of the muscular arteries." *Edin. Med. Essays, Vol. V. p. 155.*—In a haemiplegia, there is reason to suspect an apoplexy, where the head is affected.—Palsies from excessive venery are incurable, because the vital fluids are exhausted.—If a palsy seizes one member, and a convulsion happens in another, the disease ends in apoplexy.

5. PAIN, sensation, heat, formication, and *Favorable* trembling, promise security.—Supervening *fe-prognostics* vers, and diarrhaeas sometimes cure palsies. Palsies from plethora are easily cured.—Palsies which descend are less dangerous.—While the muscles continue plump, the prognostic is favorable. The arterious, nervous, and adipous vessels perform their offices.—Spontaneous sweats either cure, or increase the disease.—Where a paraplegy, or haemiplegy succeeds an apoplexy, there is room to hope, because, the cause of the disease decreases, the brain begins to be relieved.—When paralytics see, hear, and taste, with the back and point of their tongues, if they distinguish objects by the parts paralysed, there are great hopes of cure.

6. HENCE may practical inferences be *de-Practical* duced. If we only consider the wonderful *fa-inferences.* fabric of the *larynx*, the numerous muscles which modulate the aperture of the *rima glottidis*; if we consider that the pharynx, velum pendu-

lum palati, uvula, tongue, and lips, concur in forming the voice, all which are moved by muscles; if besides we know how many muscles are required towards the pronounciation of one little letter, we may cease to wonder why, so often (after the cure of an apoplexy) one little pronounciation should remain uncured, while the patient pronounces all the other letters of the alphabet distinctly. Anatomists, when they dissect live animals, often cut or tie the *recurrent nerves*, that they may not be disturbed by their plaintive cries. When these nerves are once cut, the animal becomes dumb. "Galen relates the case of a boy who lost his speech, "by the blunder of a surgeon, who (in cutting out strumous swellings, and tearing the "membranes with his fingers) tore the *recurrent "nerves* also."—"Wepferus tells a memorable story of a woman who lost her speech by a "ferous colluvies infesting her head. On coughing she threw out a copious thin saliva, after "which she recovered her speech. Nay, what "was still more surprizing, if he pressed the "cranium with his hand about the lambdoidal "future, her speech returned; when he removed his hand, she was dumb."

"Mr. Simpson, Apothecary, at the *Hot Wells* "laboured under a *rheumatism* which tormented him for years. It affected his right arm "so that he lost the power of writing. The "muscles which serve for deglutition lost their "faculty also. When the wind blowed from "the points of north or east, he was, all at "once, seized with loss of speech, which remained for twelve or four and twenty hours. "In this condition he laid a bed, making signs "for what he wanted; for, all the time, his "senses were thoroughly clear, he uttered  
"sounds,

"sounds, but could not articulate. Various remedies were prescribed by me, and by others, to very little purpose. By the recommendation of a man who had been afflicted with similar symptoms, he took a decoction of *sarsaparilla*, and was cured of the rheumatism, but the paralysis has at times returned."

Practical observations teach us that (the encephalon and nerves remaining sound, the muscular fabric mean while hurt) difficult and wonderful diseases have happened. That disease of the *Scythians* which Herodotus calls *ἑπλιναν νοσον*, or *femineum*, was, (by Hippocrates) attributed to their living, as it were, on horse-back. By perpetual succussions and compression, the *musculi libidinosi* were so weakened, that the genitals lost their virility. From hard labour and rude treatment, the *sphincteres vesicae* have often lost their contractile power. From such observations, the cause, diagnosis, and prognosis of many diseases may be learned. Such disquisitions lead us naturally to methods of Cure.

7. FERNELIUS (treating of the very subject of *palsies*) says, "Curationem ita instituiamus ut <sup>Cure</sup> ratione causa, humores, nervos occupantes, ab illis alio revellamus, derivemus, ut alioquin discutiamus, vel absumamus." To accomplish which great purposes, he proposes *Warm-Bathing*.

As the causes of palsies subsist in different places, the best effects are to be expected from remedies which strike at these causes. It is therefore of the greatest moment to distinguish the place where the palsy lies. But that cause often lies in the encephalon, as has already been observed, In this case, topical medicines avail  
but

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but little. The only remedies are those prescribed in an apoplexy.

But where all the senses internal and external are in order, and a palsy seizes a particular part of the body, then topical remedies, frictions, blisters, ointments, plaisters, &c. are to be applied to that place where the nerves belonging to the part affected take their rise from the spinal marrow. E. g. If the lower extremities are affected, all these artificial efforts ought to be applied to the region of the last lumbal vertebrae. Suppose the upper extremities are affected, the same ought to be applied to the last cervical vertebrae, &c. &c.

*Anatomy,  
its use.*

But how is this knowledge to be learned? From *anatomy* alone. Those who have dissected are rarely at a loss. Those who gather their knowledge from books only, may consult *Eustachius's Tables*. These beautifully demonstrate the origins of the nerves, with their courses. From these easily may be determined the places where topical remedies ought to be applied. Galen, that practical anatomist, strongly inculcates this in his book *De locis affectis*. *Si quis, ex anatome, ad quam partim descendant singuli nervi a medulla spinali prodeuntes cognoverit, affectas sedes quam facillime inveniet, &c.* Nam crura & manus temere & frustra multi medici tota die nocteque remediis calefacientibus perfricant, negligentes locum ubi vel spinalis medulla, vel nervus ex ipsa egrediens, laeditur. Trallianus (Lib. i. Cap. xvi. p. 88.) lays down beautiful diagnostic rules, by which the seat of the disease may be discovered. *Si igitur ex superioribus partibus quaedam affectae fuerint, nempe oculus, nasus, aut lingua, aut quaedam in facie, constat quod ipsum cerebrum habeat morbum, illique primario succurrendum.* Si ergo nulla ex praedictis partibus sensu aut motu aut

utro-



*utroque laesa fuerit, necesse est spinalem medullam laborare, aut aliquem nervorum ex ipsa procedentium.*

Mankind, when they first beheld healthy fellow-creatures debilitated and resolved without manifest cause suspected poison or some diabolical enchantment. Hence when palsies first appeared, they endeavoured to rouse the person bewitched. If this succeeded not, they knew no cure, they resigned poor wretches to their impending fate. By nature alone some were cured. When the operations of nature were duly compared with singular remedies afterwards administered, it appeared that art only imitated nature.

Palsies are easily cured, while the fabric of the brain, medulla oblongata, spinalis, and nerves remain sound. Whatever can attenuate the morbid matter, so as it may be dissipated and eliminated out of the body cures the disease. Whatever changes the morbid matter from a part of the body on which the vital functions depend to one less dangerous cures the disease. Two ounces of glutinous serum lodged in the ventricles of the brain, produce terrible symptoms. The same or a larger quantity of the same matter deposited in the *panniculus adiposus* of the leg is borne without molestation. Van Swieten says he has seen the drowsy, stupid, and lethargic miraculously relieved by the swelling of their legs. Asthmatics have wonderfully been relieved by the swelling of the joints. Palsies have been cured even by a metastasis of the morbid matter.

Fevers naturally attenuate, dissipate, and eliminate obstructions. They sometimes deposit them on other parts. *Unde febris saepe medicamenti virtutem exercet ratione aliorum morborum.* Aph. 589. — Aph. 1017. we learn that  
reso-

## DISEASES CURED.

resolutions of all the voluntary muscles, even apoplexies have been cured by fever, palsies more easily of course. Boerhaave gives an instance of a *Taylor* thrice cured of a palsy by a fever. Hippocrates gives many instances, so does Aretaeus. Sydenham wished to be able to create a fever as easily as he could cure it.

Convulsive trembling of the paralyfied part is sometimes one of nature's efforts, so is tingling and itching. These denote a renewal of the circulation, and give hopes of a cure.

Profuse diarrhaeas are another of nature's efforts, and often cure palsies proceeding from lentor.

Physicians, taking hints from nature's efforts, prescribe medicines which increase heat and motion, which stimulate the nerves, and which move the belly, and often with success.

The general causes of *palsies* have already been explained, so have the particular. From these it appears that nothing general can be laid down towards the cure; for as the causes are various, so must the methods of cure. The curatory indication is to be taken from signs antecedent and concomitant. Suppose the vertebrae thrust out of their place, vain were boasted antiparalytic remedies. The ulcer must be healed, the bones must be replaced. The cause must not only be removed, but a free flux of humors must be maintained through the arteries and nerves. This last is a task not so easy. The substance of the nerves is so delicate that it is too often destroyed by compression. The small vessels long deprived of their juices, collapse, and become impervious. Experiments teach us, that, by tying the *par-vagum* and *intercostal nerves* in live dogs too tightly, when the ligatures have been taken off, these animals

lan-

languish, and, in a few days, die. Rational practitioners will therefore be cautious how they promise cures in diseases which have lasted for years. Such cripples are happy if they find amendment, rarely are they cured. Practice confirms the truth. Palsies arising from retention of natural evacuations are cured by provoking these discharges. Those from plethora have their proper cure. My business is with that common chronical palsy which arises from *inert lentor*. Let art, in this case, imitate nature. If we run over all the remedies which have been commended by the most celebrated practitioners it will appear that they are all calculated for answering nature's purposes of raising fever, dissolving, and purging. Hence, again, we learn that the art of physic never is so beneficial as when it pursues nature's steps.

*Aphor.* 1068, "Curatio ergo tentatur  $\alpha$ , at-  
 "tenuantibus, dissipantibus, aromaticis, cepha-  
 "licis, nervinis, uterinis dictis, vegetabilibus  
 "specie succi expressi, infusi, decocti, extracti,  
 "spiritus, conditi.  $\beta$ . Salibus fixis unctione, vo-  
 "latilibus distillatione, aut putrefactione hinc  
 "electis.  $\gamma$ . Oleis expressione, coctione, infusi-  
 "one, distillatione.  $\delta$ . Saponaceis ex horum  
 "combinatione per artem productis.  $\epsilon$ . Virofis  
 "animalium partibus, insectorum succis, spiri-  
 "tibus, oleis, salibus, tincturis.  $\zeta$ . Salibus fos-  
 "silibus, crystallis metallicis, et iis ex his max-  
 "ime compositis.  $\eta$ . His omnibus ut se mutuo  
 "juvent, cum prudentia permittis: atque ho-  
 "rum quidem usu attenuatio, dissipatio, calor  
 "febrilis obtinetur. 2. Validis stimulantibus,  
 "et impacta quaecunque fortiter, motu ner-  
 "vofo tremante et convulsivo excitato, excuti-  
 "entibus: eo imprimis sternutatoria, et vom-  
 "toria

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“ toria fortiora pertinent: si aliquoties imprimis repetuntur. 3. Purgantibus per alvum calidis, solventibus, aromaticis, vegetabilibus, vel et fossilibus acribus, metallicisque mercurialibus, antimoniis, adeoque fortibus hydragogis, larga cloſi, pluribus diebus ſucceſſive repetita, datis: quorum ope copioſa, et aliquamdiu perdurans diarrhæa, excitetur. 4. Implendo primo vaſa largo potu attenuantium præmiſſorum, dein excitatione majoris motus et ſudoris ope ſpirituum accenſorum.”

To expatiate on particulars contained in this text, were to repeat Boërhaave's academical prelections. Patients generally undergo medical courſes before they come to Bath. The power of Bath-water is my ſubject only. From reaſon and experience I hope to prove that Bath-water answers the purpoſes of nature, and cures paſſies incurable by diſtant art.

*Sanavit natura hunc morbum attenuando, diſſipando materiem morboſam; ſolvendo impaſta per magnam febrem ſupervenientem, movendo per tremorem convulſivum partis, educendo.* Reaſon directs us to thoſe remedies which produce nature's effects. *Si cauſa intus hærens craſſa ſtagnansque erit, utendum iis remediis quæ producere poſſunt illa quibus natura hunc morbum ſæpe ſanavit.*

After this great imitator of nature had (like the bee) extracted honey from almoſt every flower, he propoſes at laſt *vapor-baths, immerſion, frictions, plaſters, cupping, ſcarification, veſicatories, and ſuſtigations.* “Frictiones externæ ſiccæ, calidæ, ad ruborem uſque, vel cum ſpiritibus penetrante et ſtimulante virtute præditis ex animalibus, vegetabilibusque, aut cum oleis, linamentis, baſſamis, unguentis, nervinis profunt. *Balnea vaporum, immerſiva; emplaſtra acria, aromatica, attrahentia; curbitæ,*



“ curbitae, scarificationes; vesicatoria; fustigationes; dolorem et levem inflammationem  
 “ excitantia, ut urticae et similia patent.”

Of vapor-Baths; and warm-Bathing we have treated at large. Of *frictions, oils, liniments, cupping, scarification, vesicatories, fustigation, &c.* we have also spoken under the same heads.

Suffice it here in general to recapitulate, That warm water enters by the absorbent veins, mixes with, dilutes and attemperates the blood; that the active volatile mineral principles of warm vapors and waters stimulate those nerves which are spread on the surface of the skin; that heat rarifies the fluids, and enlarges the diameters of the vessels; and that this same heat raises a temporary fever, which dislodges, subdues, and concocts the obstructing matter so as to render it fit to be excreted by the proper emunctories. Thus the muscles being relieved perform their respective offices, health, vigor and agility succeed. We proceed to facts.

1. Savonarolla (*De Balneis Carpensibus, rubrica Cases. xxiii*) says “ Comites Carmignola et Gattamala leta Duces exercitus Venetiarum, ambo *Paralyti* affecti fuere, pro quo morbo balnea mense Januario sunt profecti, et ego cum eis, et hi mirabiliter convaluerunt.”

2. Guainerus (*De Balneis Aquensibus*) says, “ quidam, velut Stephanus lapidatus, tam brachium quam manum paralyticam habebat. Is, ut praecepi, nucham sibi embrocavit, et intra octo dies liberatus est.”

3. Bartholomaeus Taurinensis (speaking of the same Baths of *Aix*) says, “ Paralyticos duos vidi sanitati restitutos hujus solius remedii auxilio.”

In Pierce's *Bath-Memoirs* we find the following histories.

4. “ Co-

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4. " Colonel Sayer, aged forty, once a commander in the army of Charles I. made his composition, and retired to his estate, from whence he was dragged, in one of Oliver's pretended plots, by a party of horse, and carried prisoner to London, in very bad weather, and worse usage. He was confined in a damp dirty jail, where the very first night, he was seized with an apoplectic fit, which determined in a palsy of the right side. He was soon allowed to retire to his home, where he underwent the common prescriptions in vain.

" When he came to Bath, he had lost the sight of one eye, his speech faltered, his memory was imperfect, with a giddiness. After due preparation, he drank the waters only to quench his thirst, he bathed, and pumped. Finding advantage he continued to come six weeks for ten years. He recovered so as to live healthy to a considerable old age."

5. " Mrs. Langton of *Newton-park*, aged 23, and with child, lost her speech of a sudden, so that she uttered one word for another. Thus she continued to the time of her delivery, when it seized her so that she could not speak at all, nor apprehend what was said to her, with the loss of the use of her limbs.

" By bleeding under the tongue, and some physic, she was restored somewhat to her speech, she came to *Bath*, by the use of which she recovered so much as to throw aside her crutches. About the periods of the moon her speech was altered a little. Thus she held for five years, bearing children, or miscarrying, till within six weeks of her time, she was seized with a *haemiplegia*. Af-

" ter

“ter her delivery, she came again to Bath, and  
“recovered. She returned several seasons, bore  
“several children, and died at last of the *Chorea Sancti Viti*.”

6. “Master Powel, a child of six years old  
“had an exquisite palsy after convulsion-fits.  
“He bathed three or four times a week, for  
“two months, getting ground apparently after  
“the first month, which advantage improved  
“so after his return that it encouraged his  
“friends to send him again and again till he  
“was cured, and afterwards came to be a lusty  
“man.”

7. “Mrs. Duffewait an attorney’s wife of  
“Wells was not only cured of a palsy, but,  
“after twelve years barrenness, conceived by  
“bathing.”

8. “The Bath-waters have not only cured  
“palsies, but there are numerous instances also  
“of their acting as preventatives. Sir John  
“Gell of *Hopton* had a *stupor* and dulness of  
“the head, a seeming *clout* about the tongue,  
“with a kind of *creeping*, and *sleepiness* (as  
“they vulgarly call it,) in his arms and legs.  
“Year after year, he bathed and pumped. He  
“died without any symptom of a palsy, of a  
“*Dropsy* in the eighty second year of his age.”

Of Dr. Guidot’s 200 *Observations* there are no  
less than 88 remarkable proofs of the power of  
Bath-waters in *paralytic* cases.

9. “Mr. Crompton’s gilded crutches now  
“hang up as *Tabulae-votivae* in the *King’s-Bath*.  
“By overheating himself, and eating fruit, he  
“was seized with a *colic*, which deprived him of  
“the use of his limbs. After exhausting the  
“pharmacopoeia he came to Bath, where he  
“bathed and drank long without amendment.  
“His disorder yielded at last. His colicy  
“pains

A a

## DISEASES CURED

"pains were removed, he threw away his  
"crutches. He often relapsed, and as often  
"was restored."

10. "Thirteen years ago, Tobias Middleton  
"Apothecary of Bristol Hot-Wells, was seized  
"with a cramp-like pain of the abdominal  
"muscles, about the region of the lower belly.  
"This pain shifted after three years to his arm,  
"and fore arm. From 30 drops of laudanum,  
"he increased the dose to two ounces a day.  
"Tired of the tincture, he took glysters with  
"half an ounce of extract of opium. Tired of  
"these, he took opium by lumps, to the quan-  
"tity of an ounce a day, as pain or lowness  
"of spirits craved. In this course he continu-  
"ed four years with uncommon costiveness;  
"once for twenty-five days. He threw up  
"every sort of food almost. By bathing, he  
"found relief only while in the water. He  
"mixed nervous medicines with opium, but  
"never was easy but while the effects of opi-  
"um remained. At last he got rid of his pain,  
"which was succeeded by such relaxation and  
"lowness of spirits, that life was a burden, busi-  
"ness he was obliged to quit.

"He took a house at Bath, where, (under  
"the care of Dr. Oliver) he drank the waters  
"for three years, and bathed three months, dur-  
"ing which time he gradually quitted the opi-  
"um, and now enjoys better health than ever."

*Bath hos-  
pital.*

FROM the opening of the *Bath Infirmary* till  
May 1760, a space of eighteen years, out of  
751 paralytics admitted, there were 183 *cured*,  
and 391 *much better*.



## CHAP. IX.

## Of ACCIDENTAL LAMENESS.

UNDER the general head of PUMPING, the reader will find particular cures of lamenesses and pains from gout, sciatica, rheumatism, palsy, scurvy, head-ach, deafness, falls, &c. I am now to mention lamenesses from other causes.

## I. Of LAMENESS after FEVERS.

Pierce's memoirs present the first cases under each species. *Cases from fevers.*

1. "Sir John Austin, aged 40, had a translation of a febrile matter on one of his legs, which suppurated, and afterwards gangrened. By the help of surgery, the wound came to be cicatrized, but there remained great weakness and pain. The limb was considerably wasted from the hip downwards. He could scarcely walk in his chamber without crutches, nor be at ease when his leg was suspended. He was therefore forced to spend the greatest part of his time in bed.

"After due preparation, and drinking, he bathed. In a week's time he had ease. In one month's time, he changed his crutches for a staff. I saw him run smartly to get shelter from a shower. At two month's end he went away perfectly easy and trig. By degrees, the limb recovered flesh and strength."

2. "Sir Herbert Crofts was so much in the same circumstances that it would waste time to give a particular description. He left his crutches as a testimony of his cure."

## DISEASES CURED

3. " Mrs. Hales of *Coventry*, aged 50, was  
 " in 1687 seized with a malignant fever, in  
 " which she was delirious near a month. A mor-  
 " tification appeared on the lower part of the  
 " *Os Sacrum*, near sixteen inches round, from  
 " which (as in the two former) quantities of  
 " dead flesh were cut out. The ulcer was  
 " three months before it could be cicatrized.  
 " She lost the use of her right leg, and foot,  
 " both which were cold, dead, and senseless.  
 " By moderate bathing, she recovered warmth  
 " and strength in five or six weeks. Next year  
 " she bathed as long. Thus she recovered the  
 " perfect use of her leg."

## II. Of LAMENESS after SPRAINS.

*Sprains.*

1. " Lady Strode's daughter had gone thro'  
 " the hands of surgeons bone setters and others,  
 " she was lame from a sprain. By partial and  
 " total immersion, together with pumping, she  
 " had, in a little time, abatement of swelling,  
 " then a beginning of strength, she left off  
 " crutches, and walked with a stick. She went  
 " through the same process for two or three  
 " years, and was, at length, perfectly recover-  
 " ed."  
 2. " Mr. Pruseau of *Essex*, and a neighbour-  
 " ing lady, Mrs. Bonham, had both weakness,  
 " pain, and swelling in the ankle-joint with  
 " wasting of the limb from the hip downwards  
 " occasioned by sprains. The young gentle-  
 " man's case was much the worst. They had  
 " undergone every thing that could be used by  
 " the most eminent hospital surgeons and doc-  
 " tors, who, in consultation, recommended them  
 " to Bath.

" She

" She came twice, and found a perfect cure.  
 " He came for many seasons, finding sensible  
 " relief every year. He walks much, and limps  
 " very little."

3. " Miss Alexander of *Edinburgh* fell from  
 " her horse and contused her knee. She was  
 " lame more than a year. She came to Bath,  
 " where (by *pumping*) she was restored to the  
 " use of her limbs."

4. " Mr. Agnew is now in this place for  
 " the same disorder. Sometimes he uses the  
 " hot pump, sometimes the cold. After three  
 " months use, he walks without pain, and  
 " without the help of a staff."

III. Of LAMENESS from a RUPTURE of the TENDO ACHILLIS.

1. " The Rev. Mr. Parsons was very health- *Tendo Achillis.*  
 " ful and strong. Walking up a hill, an into-  
 " lerable pain seized the calf of his leg all of a  
 " sudden, insomuch that hearing no musket go  
 " off, he thought that some body had shot him  
 " with a cross-bow; but being convinced of  
 " his mistake by a friend, he said he had broken  
 " something by overstraining. He fell imme-  
 " diately to the ground, the pain made him  
 " sweat, faint and sick, he could not stand. He  
 " was carried home, and continued lame for a  
 " long time with his limb emaciated.

" He bathed and pumped, which brought  
 " heat into the part, it took off the convulsions,  
 " his leg and thigh began to plump. He walk-  
 " ed five or six miles on end with a staff.

IV. Of LAMENESS *from a* WHITE-SWELLING.*White swelling.*

1. " Mr. Bony, aged 40, was very lame, and much pained in his right knee, with great swelling, not discoloured, with the joint contracted. The whole seemed to be puffed up with wind or uliginous matter, which, upon pressing, manifestly moved from one side of the joint to the other.

" The Bath gave him some ease, but lessened not the swelling, then it was pumped, after which the mud of the Bath was applied, by which he was much better; he came a second, and a third time, so that there was no remainder of tumor, pain or lameness.

2. " Francis Hechington of *Northallerton*, aged 31, came to Bath, June 1689, with a great *white swelling* on his knee for six months before. He used the hot-bath and pump but five days, till the tumor was discussed. This humor (Dr. Guidot says) was more *stulent* than *pituitose*."

V. Of LAMENESS *from* WOUNDS.*Wounds.*

1. " Colonel Tufton, in a sea-fight, received a wound with contusion and fracture in his right hand by a splinter, which broke the bones of the thumb, and fore-finger, and lacerated the muscles and tendons; a conflux of humors falling on the part, it was forced to be laid open more than once, bones and splinters were extracted, it was healed at last, but his hand was useless, and he was pained by fits.

" He bathed and pumped, which quickly eased the pain, and recovered the use of some  
" of



“ of the other three fingers. This he repeated  
 “ several seasons after. The fore-finger and  
 “ thumb became in some measure useful, tho’  
 “ a whole joint of the latter was lost. The  
 “ whole hand is as useful as such a hand can  
 “ be.”

2. “ The earl of Peterborough, from a  
 “ wound in his right hand, came hither twice,  
 “ used the same method, and got much be-  
 “ nefit.”

3. Captain Robertson of *Bocland’s* received a  
 “ gun-shot wound about the joint of the elbow,  
 “ which was attended with pain, inflammati-  
 “ on, swelling &c. By pumping he recovered  
 “ so as to be able to pull off his hat. He  
 “ has now joined his regiment in *Germany*.

VI. Of LAMENESS from FALLS.

1. “ Thomas Andrews of *Halson*, came hi-*Falls*.  
 “ ther in June 1682, battered and bruised from  
 “ head to foot by a fall; his horse laying upon  
 “ him some time. He had some bones dislo-  
 “ cated, which were set. He complained of  
 “ weakness, and pains in his back, hips, and  
 “ in his breast, so that he could not breathe  
 “ freely. By six weeks bathing and pumping  
 “ he returned much better, and, after some  
 “ more trials, he quite recovered.”

2. “ Mr. Hollworthy, over and above the  
 “ former complaints, had a paralysis of one side  
 “ from concussion of the brain. He was very  
 “ lame, and weakly. By the same methods  
 “ repeated, he recovered with a stiffness that  
 “ makes him limp a little.”

3. “ *Guidot’s register* contains the following.  
 “ Lord Hereford, in hunting the fox, received a  
 “ fall which deprived him of the motion of his

## DISEASES CURED

"right arm. By pumping and bathing, he recovered its use."

4. "Major Hawley had the patella-bone of his knee thrice injured by falls, which obliged him to use crutches. By using the cross-bath, and pumping only seven times, he recovered perfectly.

5. "Lord Eglinton, by hunting the fox, had a fall, by which he bruised the muscles and tendons of both hands; he received hurt on his head, right shoulder, and elbow, the fingers losing their motion inwards, numbed, and senseless. By bathing, and pumping, he was cured."

6. "Sir Robert Holmes (in aches and bruises received at sea) received benefit by the hot-Bath, in testimony whereof he left three brass rings."

## CHAP. X.

*Of the JAUNDICE.*

*Jaundice.* **V**ARIOUS are the symptoms of the *jaundice*, various its appearances, causes and effects. We commonly reckon only two sorts, yellow and black, though there are diversities of shades between the lightest yellow, and the black, as Aretaeus has remarked in his book *De causis et signis morb. diuturnor.* p. 45. Boerhaave (in his Aphorisms) calls it *hepatitis et icterus multiplex*. There are some jaundices which any body may cure, there are others which no body can. As jaundices of all sorts come to Bath, it may not be unnecessary to take a survey of this disease, so that we may be able better to form a conjecture in what sorts Bath waters may cure, and in what they may hurt.

## I. THE

1. THE YOUNG are rarely troubled with this *Subjects.* disease. It commonly attacks those who brood over griefs, or who retain grudges or passions. Sadness and thought constrict the vessels so as to produce a sense of weight and anxiety about the praecordia. Humors thus obstructed produce polypous concretions, putrefactions, &c.

The studious and sedentary are naturally subject to this disease, those who bend their bodies forward, and sit too long at meals. The bile, by remaining in the gall-bladder, inspissates so that it cannot easily pass. Galen (in his book *De locis affectis*) remarks, that the very same thing happens to the gall-bladder as happens to the urinary; by retention it becomes paralytic.

2. The first symptoms are, A troublesome *Symptoms.* sort of tension about the praecordia, with a sense of weight. Some hours after meals, a sort of heart-burn, the fore-runner of jaundice. A slight yellow is to be discovered in the greater canthus of the eye, the urine begins to be coloured, the excrements are bilious. Then, of a sudden, anxiety, with intolerable pain at the pit of the stomach, sometimes over the whole belly, often mistaken for the colic. Fever and vomiting supervene. After these symptoms have lasted for some hours they remit, the whole body puts on the yellow hue, with an universal itching, the urine is tinged, the patient finds himself very easy, the colour of the urine abates, so does that of the skin; in a few days, the disease seems to vanish. The excrements some days before the paroxysm begin to be white, clayish, or greasy.

After some weeks, sometimes months, this round of evils returns. When the sick has suffered frequent attacks of this sort, there remains at last a confirmed Jaundice. The colour grows deeper,

deeper, the spittle sometimes tastes bitter. The skin changes from yellow to black, the feet swell, so does the belly, the patient dies hydropic.

Sometimes it is accompanied with fever so intense that the Liver inflames and suppurates, a memorable instance of which stands recorded by the benevolent Dr. Dundas, in the *Edinb. Med. Essays*, Vol. II. p. 345, &c.

*Seat.*

3. This inflammation has its seat in the capillary vessels of the *Hepatic Artery* and the *Vena Portarum*. Injections discover the windings and anastomosis's of these vessels over the whole substance of the liver. The branches of the *Vena Portarum* are filled with blood which moves more slowly than the arterial; this is the reason why the signs of inflammation are not so manifest in this as in the other viscera; this may be the reason why Physicians have so often been mistaken in their *Diagnosics*.

*Causes.*

4. THE remote causes of Jaundice are colics, hysteric and bilious; poisons; drastic purges; grief and anger; ossification or compression of the biliary ducts; pregnancy; obstruction, schirrus, or abscess of the liver; intermittents prematurely stopped; stones obstructing the cystic duct; over-grown omenta; inflammation; worms; sudden chills, &c.—The proximate causes are, 1. Regurgitation and absorption of bile already separated. 2. Excess, viscosity, and acrimony of bile unsecreted.

*Diagnosics.*

5. THE diagnostic signs are yellowness of the skin, tunica albuginea, urine, and white excrements.

*Prognosics.*

6. THE prognostics are more favourable in youth than in old age, in the strong than in the weak, in the yellow than in the black, in the Jaundice single, than complicated with other disorders.



disorders. In the last days of a fever, supervening Jaundice performs the part of a crisis. Jaundice supervening inflammation of the liver, stomach, or duodenum, portends great danger. Natural sweat is an excellent sign. Jaundice complicated with dropsy may be said to be incurable.

7. FROM the sum total of causes and symptoms, we may infer, that from obstruction of the bile arise constipation, white stools, fullness, and lassitude. From regurgitation, absorption, or redundance of bile, proceed colour, and bitter taste. From turgescency, irritation, and weight of the gall bladder, proceed sighing and vomiting. From acrid bile proceeds itching, and parched skin. From bile rendered acrid by stoppage, proceeds looseness.—While the liver continues to be inflamed, it obstructs the vessels, stops the fluids, raises tumors, compresses the surrounding viscera, and inverts the generation, secretion, excretion, circulation, and action of the bile.—Of all the humours, the bile putrefies soonest. Putrid fluxes supervening the hepatitis, prove the doctrine. —Those who are conversant with dissections, or with the writings of the anti-ents, will not wonder, when they meet with Jaundices which defy their endeavours. *Tabular. Theatr. Anatom.* p. 58. Benedictus discovered the neck of the gall-bladder choaked up with tophaceous matter. The bladder was turgid with a pelucid insipid serum, which, applied to the fire, coagulated like the white of an egg. The secretion of good bile was abolished in this man.—In another, the *Cystic Duct* was found concreted and impervious, the gall-bladder was twice as big as a man's fist, *Edinburgh Med. Essays*, Vol. II. p. 310.—In a third, the Liver was totally degenerated, *Acad. des Sciences l'année*

1701. p. 193.—Boerhaave (in his *Academical Praelections*) narrates the case of a woman who (after the jaundice) died of an *Ascites*. The liver was of a darkish yellow, a great part of it dry. The gall-bladder very large, containing many hydatides, and glutinous matter, partly lymphatic, partly bilious, with black grumous stuff. The passage into the Duodenum was so patulous that it admitted the little finger. The woman who attended her, said she had passed many such lumps. Here the ducts were open, but the liver was vitiated.

From the sum total of these symptoms, and causes, we may conclude that the general cause of this disease proceeds from whatever hinders the passage of the bile into the Intestine. As the causes are various, so must the cure be easy or difficult.

Cure.

8. FROM a survey of the preceding causes, we may conclude, that most of them are merely accidental. Concretion may be assigned for the general. He who best knows how to dissolve, and expell this obstructing matter, may truly be said to cure the Jaundice.

Van Swieten (in his collection of Commentaries on Boerhaave's Aphorisms) says, "Ubi ergo *Isterici* periodici mihi occurebant in *praxi*, ob optimo Praeceptore monitus, semper cogitavi de calculis in cystide fellea haerentibus, atque ad hunc scopum totam indicationem curatoriam direxi, satis felici sæpe successu. Multa tentavi, ut invenirem menstruum, quod solveret concreta, & simul tuto & integris viribus pervenire possit ad illa loca; sed nondum fui tam felix, ut tale quid detegere potuerim."

As the Baron honestly despairs of finding a medicine or solvent that bids fair to reach these calculous

calculous concretions with its full force, let us look about, and see how it is nature directs the dumb creation to their cure. Glisson's Observations, as well as daily experience convince us, that those concretions constantly found in the livers of stall-fed cattle are fused by the vernal juice of grass, and carried off by a supervening diarrhoea. Hypocrates lays it down as a general curative rule, *Quæ ducere oportet, ducenda quo maxime vergat natura.*

The benefit of *Sweat* in critical febrile discharges needs no explanation. Galen (*De Sanitate tuenda*) relates the following Case. *Ipsum bilem, infarcto hepate, in sanguinem regurgitantem, per sudores amaros exivisse de corpore in Ictericis observavi.* Chamel (*Acad. des Sciences l'an 1737, Hist. p. 69*) says, "I saw a thick sweat which tinged the linnen with a saffron colour issue from the pores of an icteric woman, the Jaundice vanishing after the sweat."

From theory as well as practice we know that the rational cure of *Jaundice* depends on medicines diluent, deterfive, and antiseptic, inwardly and outwardly administered. In disorders of the liver arising from hot, or cold temperament, Galen (*Method. med.*) advises internals, and externals of a strengthening quality, such are all styptic mineral waters. In Jaundice, and for discharging inflations, Baccius (*De Thermis, pag. 112*) recommends temperate sulphureous baths, he mentions Bath waters in particular. *Ad morbum regium, & ad inflationes excutiendas, nec secus sulphuratarum balnea temperata Aponus, Aquisgranum, Bathoniae in Anglia, ne vulgares, in Italia, reiterem. In frigidis vero hepaticis, seu qui obstructo aut indurato viscere inflantur, & cachexiam illapsi, efficaciora tam intus quam foris calorifica digerentiaque desiderantur.*

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Bath-waters are diluent, deterfive and antiseptic. If fomentations have availed, what better fomentation, than Warm bathing! If diuretics and sudorifics, what better diuretic or sudorific!

Common practice prescribes *Bitters* in Jaundice every day. In cases where the food ferments too much, or is too long detained by the debility of the stomach, acids, bitters, aromatics, and wines have their uses, they check immoderate fermentations, they brace the fibres of the stomach. But (by their antiseptic quality) they correct putrefaction and fermentation, thus they prevent digestion; for putrefaction and fermentation are necessary to digestion. Bile is also a bitter, we allow, but vegetable and animal bitters differ egregiously in their operation. The former are antiseptic, the latter are possessed of every opposite quality. *This being the case* (says Pringle in his *Experiments on Septics and Antiseptics*) *we need not be surprised at finding digestion so little mended in the Jaundice by Bitters which are commonly prescribed to supply the defects of the Bile.*

Distant patients have gone thro' regimens sagacious and ingenious. Bath-water improperly drank has converted slight jaundices into deadly ailments. Bath-water has cured inveterate Jaundices. Van Swieten's testimony confirms the doctrine. In his *Commentaries on Boerhaave's Aphorisms*, Vol. III. p. 346, he delivers his sentiments thus. "Si jam simul considerare  
"tur magnum numerum morborum chronico-  
"rum, in visceribus abdominalibus, sedem suam  
"habere, & imprimis in *Hepate*, in quod om-  
"nis sanguis venosus viscerum chylopoietico-  
"rum confluit, patebit ratio quare adeo efficax  
"fit in morborum chronicorum cura *Aquarum*  
"Medicatarum usus. Magna enim copia po-  
"tatae hae aquae, venis bibulis intestinorum ci-

" to



“ to resorptae, integris suis viribus, pro magna parte, in Venam portarum veniunt, & sic, per omnia *Hepatis* loca distributae, solvant impacta, & vasa obstructa referant.” Facts are sturdy evidences.

1. Dr. Baynard (in his book of *Cold-Bathing*) *Cases.* records the following *Cases*. “ Mr. Hadly, of an ill habit from an irregular life, had been wrong treated. He came at last to Bath. He complained in the right hypochondria, and had a great induration in the region of the liver. By purging, *drinking*, and *batbing*, he got a perfect cure.”

2. “ I knew a Physician who had a severe *Jaundice* with a schirrous liver. He was cured by drinking Bath-water, and by eating the herb *Taraxicon* fallad-wife.”

3. “ Madam Thistlewaite, of *Wintersloe*, received a great cure by the Bath-waters, joined with other aperitives in as high a *Jaundice* as ever was seen, which had long seized her, and she a very lean emaciated worn out weak woman.—In this Case, and also in most diseases of the Liver, I think the Bath-waters the best specific in the world; if taken seasonably with due preparatives and advice.”

4. From Dr. Pierce we have these. “ Justice Dewy of *Fordenbridge, Hants*, came hither in February 1693, in the sixtieth year of his age. His complaints were (besides the yellowness of his skin) weakness, faintness, decay of spirits, shaking in his hands, pain in his limbs, doughy swellings of the legs, clamminess of his mouth, drought, and foulness of tongue.

“ He had but lately undergone purging, and therefore had the less need of preparation. He took at first but two pints, then three, then

“ two

## DISEASES CURED

“ two quarts, seldom exceeding. They passed  
 “ freely by stool and urine.

“ Between whiles he was however purged  
 “ with *Rhubarb* and *Calomelanos*, he took altera-  
 “ tives, and now and then intermitted the wa-  
 “ ters. About the middle of his course he was  
 “ let blood, which had a quantity of serum tinc-  
 “ tured yellow. About the latter end of his  
 “ course he bathed three or four times. He  
 “ had before bathed his legs and feet to get  
 “ down the swelling, which answered.

“ He apparently got vigor and strength, a  
 “ clearer countenance, and a better habit of body.  
 “ Thus he returned after two months stay. He  
 “ returned in *May*, stayed about the same time,  
 “ with manifest advantage, which I suppose he  
 “ yet continues to have, because he returns not  
 “ to the same means by which he found so much  
 “ good.”

5. “ Michael Harvey, of *Clifton, Dorset*, aged  
 “ 66, many years subject to the *Gout*. Fifteen  
 “ years ago, in one of his fits, he turned yellow,  
 “ took medicines for the *Jaundice*. In April  
 “ last, he was seized with a violent pain in his  
 “ stomach, which pain he was subject to by fits,  
 “ but was now more than ordinary fainty, the  
 “ jaundice appearing presently in his water, but  
 “ not in his eyes, face and skin till about a  
 “ month after. By the advice of Radcliff and  
 “ others, he took medicines to little purpose.

“ He came to Bath the last day of August  
 “ 1696, so weak and ill that he could hardly  
 “ keep life in him. The night after he had a  
 “ most violent colic fit, in which he strained  
 “ very much to vomit. He was yellow all  
 “ over.

“ He set presently about drinking the waters  
 “ (being in continual pain, and stomachless) but

“ at

" at first in small quantities. The third time of  
 " taking them he voided a gall-stone about the  
 " bigness of a pigeon's egg, with several lesser  
 " pieces of the same colour and consistence, a  
 " *fabulum* to the quantity of a spoonful and  
 " more.

" It is observable that this gentleman had a  
 " stool, before the stone came off, as white, and  
 " like to tobacco-pipe clay; but the stool that  
 " came with and after the stone was as yellow  
 " as saffron. He was immediately more at ease,  
 " he recovered by degrees, he goes on drinking  
 " the waters, this being the one and twentieth  
 " day of his cure, walks abroad, gives visits, eats  
 " heartily, and is very likely to recover per-  
 " fectly."

6. Dr. Guidot records this *Case*. " A worthy  
 " Knight of *Devonshire* (in obstructions of the  
 " *Liver and Bladder of Gall*) by drinking the wa-  
 " ters twenty-one days at the pump received  
 " great benefit."

7. " The Reverend Mr. Lyon, aged 60, and  
 " upwards, of a gross habit, swarthy complexi-  
 " on, and choleric disposition, had laboured long  
 " under an inveterate *Scurvy*. His legs swelled,  
 " were hard, and discoloured with large deep  
 " foul ulcers. For this disorder he came to  
 " Bath.

" He drank the waters in too great a quan-  
 " tity. He tarried in the hottest part of the  
 " kitchen of the *King's Bath*, sweating, scrub-  
 " bing, and broiling, for one hour and a half at  
 " a time.

" I often gave him warning that there was  
 " danger of throwing inflammation on the liver,  
 " already vitiated and obstructed, as is the case  
 " in *Scorbutics*. He laughed at my prognos-  
 " tic, scorning the dull beaten track, as he

B b

" called

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“ called it. In excessive drinking and bathing he persisted.

“ My prognostics were at last verified. I found him one day very ill indeed. He had every symptom of the *Jaundice*, rather black than yellow, a high fever with fixed pain in the region of the liver.

“ I ordered him immediately to be bled. Next day, he took a gentle purge of *Senna*, *Rad. Curcum. Rub. Tinctor.* &c which (as is common in Cases of unsound livers) operated so immoderately, that his pulse intermitted. His spirits flagged. Nature was on the point of yielding. He then wished he had followed the dull beaten track.

“ By some little helps, the symptoms abated, he recovered strength. During this reprieve I ordered him to take two drachms of nitre thrice a day, in a large glass of Bath-water, a medicine highly commended by *Heister*. He swallowed as much soap as he pleased. I indulged him in the free use of Rum-punch, enriched with sugar and the juice of Seville-oranges. I advised him to eat freely of China-oranges.—Never was a patient more tractable.

“ His Jaundice gradually went off. His old companions, the foul scorbutic ulcers, cicatrized. He really seemed to be regenerated. The cure of his Jaundice proved the cure of all his ailments. By the help of Soap and Lime-water, he continued (ten years) as well as a man of his age and habit of body could be.”

8. “Mrs. Elliot of *Golden Square, London*, laboured under a constant vomiting with racking pain about the orifice of the stomach. She had neither retained food nor medicine for a month.



month. This was the case described to me by her brother-in-law, my late worthy friend Captain Wilkinson, Agent. Supposing her complaints owing to biliary concretions then passing the *Duct*, I told him that hers was truly a Bath-case. My opinion was related to an eminent physician then attending. He roundly pronounced Bath-water pernicious in all respects. Dr. Girningham was called in. He adhered to my opinion.

"With great difficulty she was transported to Bath. When I first saw her, her pains were exquisite, she threw up Laudanum and every other thing. She was lodged in one of those houses from whence there is a *Slip*, or communication into the Bath. I advised her to drink a glass of water at any time in bed; and, as fast as she threw that up, another, and so continue till she was sure that the water began to stay on her stomach. She was also carried into the Bath, sometimes twice in a morning, and there supported till she began to vomit. While she was in the bath her pains ceased. In a few days the water began to stay. At once she passed twenty-two gall-stones, as big as beans and pease, by stool. At different times, more.

"Her pain vanished. From a skeleton (in less than three week) she grew plump, and walked on the Parade. The only medicine that she used was a deobstruent gentle purge of *Rhubarb Rad. Curcum. Rub. Tinctur. &c.* with *Castile soap*.

"She went home. Her complaints returned. She came again to Bath, where she pursued the same regimen, and found her cure. Profiting by experience, she staid six months;

B b 2

" during

" during which time she drank about a quart of  
 " water a day, and swallowed two pounds and  
 " upwards of soap every week. For these eight  
 " years past she has enjoyed perfect health, ex-  
 " cepting grumbling remembrances of her pain,  
 " which she continues to lull by the constant  
 " use of soap, and Bath-water, warmed at  
 " home."

" Every body in Bath knows how deeply  
 " *Mr. Levellyn*, Builder of this city, was tinged  
 " with the Jaundice. Every body sees him  
 " now restored to his usual tint. He tried va-  
 " rious Doctors, and various nostrums. He  
 " mean while, drank the Bath-waters, and, with-  
 " out them, it is more than probable, he never  
 " could have recovered."

## C H A P. XI.

*Of the DROPSY,*

*Definition.* 1. **W**HEN the serum comes to be extrava-  
 sated, and stagnates in any of the ca-  
 vities of the body, that disease is called a *Dropsy*.

*Cause.* 2. It may arise from many causes. My busi-  
 ness is with those only which countenance the  
*rationale* of Bath-waters. Obstructions in gene-  
 ral produce this disease, so do obstinate Quartan  
 Diarhaea's, Dysenteries, Gout, excessive evacua-  
 tions, melancholy, scurvy, &c.

*Symptoms.* 3. Its symptoms are too apparent to want  
 to be enumerated.

*Cure.* 4. The curative indications are 1. To procure  
 a free circulation of the juices. 2. To carry off  
 the liquor deposited in the cavities. 3. To correct  
 that fault or indisposition of the parts, whether  
 it be the cause or effect of the disease.

Strengthen

Strengthening, stimulating cordial medicines answer the first, especially those which are gratefully acid, and gently aromatic.

To obtain the second, the cause of the obstruction must be found out. This must be removed or corrected, which is often done by *Mineral waters*.

Steel medicines, and strengtheners gently astringent answer the third intention, given in a proper dose, and seasonably administered.

Friction, motion, and heat greatly conduce. If the pressure of water be 800 times greater than that of the atmosphere, how can we wonder that (in *Anasarca's* especially) this pressure should thus drive the humours into their proper channels! There are many examples of dropsies cured by *Diuretics*, vitriolate metallic medicines dissolved in water; such have been specifics.

Those who content themselves with turning philosophic studies into gainful trades, can hardly reconcile the internal or external use of mineral waters with bodies drenched in water; they cannot account how the thirst of hydropics should be quenched by water. They condemn the practice as irrational. Hydropics die by *Ward*, or the disease.

In the writings of the ancients we find well authenticated cures of *Dropsies*.

Baccius (*De Thermis*, pag. 112) says, *Occurrit aqua Grottæ omni incipienti Hydropisi. Tungri aquam in Burgundia mirificam tradunt in hydropicis, ut quæ aquas evacuat ebibita jure balnei, flatum discutit, & tamen sitim extinguens. Bergomenses Trascherii aquam experimentis commendant. Quæ alteri vitio, vel lienis, coacervati solent humiditates, in Ascitis specie principio, vidimus nitratas, & salsulas quosdam modice purgatorias sanasse in totum. Salsiferum balneo in Lesbo curari hydropem meminit Galenus.*

*lenus. In Tympanite discussoriæ omnino facultatis esse oportet aquas, sive in potibus principio, sive in balneis in fine; idonea quoque est e vaporibus ipsarum calidarum evacuatio, nec minus super saxa, harenasque calentes, sub sole recubitus insolatusque. In Hyposarca assiduo præter cetera prosunt illutamenta, & in marinis, salsis lacunis, atramentosis paludibus, in sulphureosis callidissimis, quantum vires sufficiunt, lavari. His (inquit Celsus) sudor evocandus in arena calida, Laconico, clibano, similibusque. Maxime utiles naturales & siccæ sudationes. Arena e littore maris sole fervefacta capite tenus hydropicis obruta, vulgaris presidii est. Incomparabile remedium ad omnem hydropem in pulvere ad aquas calidas in Ischia voluntari, atque insolari. Ex plumbo balnea in Lothoringis omni hydropico permira habentur cum lutamentis. Aridum & valde potens Stygianum ex nostris, non longe ab urbe, & Sabatinum, Bullicanum, Therma in Sicilia, quæ omnes calidæ ad hydropem valere, ab auctoribus promittuntur. Omni autem hydropi ex salsis clysteria utilia sunt. Nec minus Stuphæ, hypocausta, pyrateria.*

In the records of Physicians who practised at Bath, seventy or eighty years ago, we also find unquestionable narratives of cures in hydropics. We also find instances of *Thirst*, the direct symptom of this and other diseases, cured by Bath-water. Have the waters lost their virtue, has the practice been condemned from reason or experience? No. Physicians have contented themselves with jogging on in the dull beaten track. Hydropics are excluded from private and hospital practice, and yet *Ward* cures them every day by a method similar in its operation to that of our waters. But, no longer to dwell on such topics, let us see whether we can support this short theoretical deduction by observations, histories, or facts.



1. Guianerus (*De Balneis Aquensibus, Cap. 3*) *Cases.* says, "Asciticam his aquis balneari jussi. Hæc

"etiam mane pintam unam illius aquæ bibebat, & die alia in vespersis solum balneum intrabat; aliquando tres pintas mane bibebat, & per dies XL hoc continuans liberata est."

2. Ugulinus (*De Balneis Comitatus Pisarum*) says, "Vidi ego multos in usu Balnei hujus bydropicos, & ictericos curatos."

3. Pierce (in his *Bath Memoirs*) gives the following. "George Russel, a tippling butcher of this city (by going too often to the ale-house) rendered himself unable longer to go to market, he turned Sheriffs Bailiff, &c. and then drank on till he had distended his carcass as much as he had extenuated his stock. He was swollen from head to foot by an exquisite *Ascites* and *Anasarca*, and, as is usual in that distemper, was excessive thirsty; the more he drank, the more he craved for drink, and the less he discharged by urine.

"I first prescribed drastic purges, then Bath-water which quenched his exorbitant thirst, as indeed it infallibly does beyond any other liquor. They passed also so well by urine that, by repeating his purge once a week, and drinking the waters, he was reduced to his pristine shape. Ordering then some strengthening bitters, I dismissed him perfectly cured. So he held two or three years, but he returned to his beloved tippie, till he brought himself to the same pass; and, without consulting me, by the apothecary's advice, he repeated the same regimen with the same success; and so for a third, if not for a fourth time, till at last, with continued drinking, bangs, and bruises to which *Bailiffs* are subject, he so corrupted his entrails, that he died of an inward impostumation."

B b 4

4. "Mr.

## DISEASES CURED

4. " Mr. Treagle of *Taunton*, grocer, aged 46, had long been *scorbutic*, *nephritic*, *cachectic* and *hydropic*. Finding no relief from any medicine, he came hither with his legs and thighs greatly swollen, and so weak that he was hardly able to stand; he had large red livid spots in both; he made very little water, and that jaundiced; his eyes and face were of the same complexion, withal horribly desponding and melancholy.

" For the first week I purged him, made him take *chalybeates*, *hepatics*, and *antiscorbutics*, intermixing the waters now and then. By these, his countenance and the colour of his water was somewhat changed. By drinking, moderate bathing, and purging, the shape and colour of his legs were also altered. At the end of six weeks, he returned very much advantaged in every respect. He carried home directions for a *diet-drink*, for which I had his thanks some years after."

5. " Much in the like, if not worse circumstances was one *Appletree* an inn-keeper in *Crookborn*, a man aged about 60; besides the foregoing symptoms, he had a cough also, he neither could walk nor stand.

" He bathed and drank the waters, took *pectorals*, *antiscorbutics*, and *hepatics*. He returned well, and came back next year to confirm his cure. Again he returned, goes about his business, and probably drinks with his guests, in which he never was backward, and which was supposed to be the cause of his distemper.

6. " Sir Robert Holmes, whom we have already recorded, cured of *batters* and *bruises* in sea-fights, came here for a *colica pictonum*, *atrophy*, and *dropsy*, of all which he was cured,

" ed,

“ed, recommended his friend Mr. Warner,  
“*Mayor of Winchester*, who, after a fit of the  
“*gout*, had his legs and thighs very much  
“swollen and discoloured with large scorbutic  
“spots; he made a lixivate water in small quan-  
“tities, had little or no appetite with great  
“thirst.

“I began with gentle purgatives, then put  
“him upon drinking the waters; and, after  
“convenient time, permitted him to go into  
“the Queen’s-bath. His swelling abated, his  
“pains asswaged, his strength returned, so that  
“in less than two months he went back great-  
“ly advantaged in every respect.”—“I might  
“add several other instances of this kind, but  
“I forbear for fear of enlarging my book be-  
“yond its intended bulk.”

Of the external and internal effects of cold  
water Baynard (in his book of *Cold-baths*) gives  
us the following. “A wine-cooper who had  
“been a free liver fell into a jaundice, thence  
“a *dropfy*, the *ascites*. He applied to Sir Tho-  
“mas Witherly, president of the college of phy-  
“sicians, who treated him in the usual methods,  
“but nothing would do. He was prodigiously  
“swelled all over. Forsaken by friends and  
“physician, he begged his wife to carry him  
“to *Issington-wells*, there for once to quench  
“his thirst insatiable, and die in peace.

“From between 4 in the afternoon to 9 or 10  
“at night, he drank 14 quarts, without mak-  
“ing one drop of water. He sunk down in  
“the chair in a clammy sweat. Thence being  
“laid on the bed for dead, in half an hour’s  
“time, the people heard something make a  
“small rattling noise like a coach in a distant  
“gravel-way. Soon after he began to piss,  
“and pissed in an hour’s time about 7 or 8  
“quarts;

“quarts; from the weight of the waters, he  
 “also had two or three stools. He began to  
 “speak, and desired a little warm sack, after  
 “which he fell into a profound sleep, in which  
 “he both sweat, and dribled his urine all that  
 “night. Next day, he drank 4 or 5 quarts  
 “more of water, had two stools thin, and wa-  
 “terish, still pissed on. For five or six days  
 “he drank on, taking mutton-broth, and so  
 “recovered. The relation of this unaccounta-  
 “ble cure had for ever been lost, had not Sir  
 “Thomas accidentally met with the good wo-  
 “man his wife about two years after, and ask-  
 “ing her, how long her husband had lived af-  
 “ter he had left him? She replied, pointing  
 “to a little slender man standing by her, *there*  
 “*be is, this is the husband who was your patient,*  
 “*and who recovered by turning his own physician.*”

Of the external use of cold-water, the Doc-  
 tor gives two remarkable instances.

1. “James Crook of *Long Acre*, had *dropsy*,  
 “*jaundice*, *palsy*, *rheumatism*, and an inveterate  
 “pain in his back.

“In three immerfions, the swellings of his legs  
 “funk, so did the pain of his back, as did the  
 “jaundice, blowing from his nose a great quan-  
 “tity of a bilious yellow matter. From the  
 “frigidity and pressure of the fluid we may ac-  
 “count for his pissing more than he drank;  
 “but, how, the icteric matter should be thrown  
 “off by the nose, he who can tell, *erit mihi*  
 “*magnus Apollo.*”

2. “A Scotchman, in an *ascites*, was cured.  
 “By his girdle which I saw, he fell six inches  
 “in five days, pissing freely all the time.”



## C H A P. XII.

## Of FEMALE DISEASES.

**H**IPPOCRATES (*De locis in homine*) may well be said to have spoken from experience, when he said, *αι υςερας παντων των νοσηματων αιτας εστιν. Omnium morborum causae sunt uteri.* Besides those diseases which equally affect men and women, there are some peculiar to the *fair sex*. Humanity obliges me to point out those aids which may be had from the waters. Respect obliges me to mention but few names, and those of persons long forgotten.

## I. Of OBSTRUCTION.

1. OBSTRUCTIO, chlorosis, febris alba, amatoria, morbus virgineus, icterus albus, and green sickness are different names only for one and the same disease. *Definition.*

2. The remote causes of obstruction are sudden chills, viscid food, fear, grief, excessive evacuations, astringents, other diseases, &c.— *Causes.* Its proximate are, 1. Rigidity of the uterine vessels, 2. Cachexy, 3. Compression, and 4. Lensor of the humors.

3. The symptoms are pain and heat of the loins, pulsation of the arteries, head-ach, want of appetite, languor, shivering, slow fever, thick red urine, inflammation, suppuration, gangrene, varicous swellings of the veins and legs, vomiting, anxiety, cough, palpitation, fainting, vertigo, apoplexy, madness, green sickness, longings, fluor albus, and various haemorrhages. *Symptoms.*

4. The prognostics vary according to the symptoms, time of suppression, age, and causes. *Prognostics.*

5. In

Cure.

5. In rigidity of the vessels; relaxing fomentations, with tepid baths avail. In lentor, sluggish circulation, warm baths are also indicated. In poverty of juices, Bath waters are indicated internally. If from melancholy or despair, a fiddle and company are sovereign. Music has greater power than argument

From Pierce's memoirs we have the following.

1. "Mrs. Elizabeth Eyles, of the *Devizes*, aged 16, was very far gone in this disease with hysterical fits, she was pale, thin, stomachless, faint and tired upon the least motion. She had tried medicines at home, to no purpose. The same medicines with bathing, and a little water internally restored her (in six weeks time) to her appetite, complexion, and customary benefits of nature."

2. "A daughter of lady Berifford's, aged 19, was brought hither June 1693. She was, in all respects, rather worse than the former. She bathed, and drank. At the end of seven weeks, she went off so well, that she wanted no help of the physician."

3. "Mrs. Eliz. Wayte, aged 20, besides the symptoms of the first, had the jaundice, scurvy, and dropsy in her legs and feet. She was short breathed to a degree, hot, and inclining to a hectic, with palpitations. She drank and bathed. In five or six weeks, she walked in the meadows, recovered her appetite, complexion, flesh, and spirits."

4. "Miss La Chambre, aged 13, of the very complexion of the chalk, mortar, and other trash which she used to devour, was faint, tired, heavyheaded &c. I began with a vomit and purge. She then drank and bathed. In a few weeks, she rejoiced more at the sight of a shoulder of mutton than a hand-

“handful of clay. The waters gave her new life and vigour, she became a healthy young woman.”

It is not the eating of *chalk*, *charcoal salt*, or such trash that brings on the green-sickness. The disease depraves the appetite; and thus creates a longing after things unaccountable. The foregoing observation proves the fact.

From Guidot we have drawn the following.

5. “Mrs. Manwaring of *Cheshire* (in *full habit* and *obstructions*) received benefit by bathing in the King’s and Queen’s.

When the catamenia are obstructed through poverty of blood, or its bad disposition, the symptoms enumerated in the foregoing section appear. The same method of cure will enable nature to perform her work.

6. “Madam Constance Harvey in a *cachexy*, or ill habit of body, joined to inveterate obstructions, received cure by bathing and drinking, August 1673.”

7. “Mrs. Margaret Hall of *Ross* received cure of a *cachexy* and great obstructions by drinking and bathing for a month, June 1673.”

8. “Miss Finch of *Reading*, in the same case, received great benefit, 1693.”

9. “Madam Barber, in the spleen, and obstructions, received great benefit, 1693.”

## II. Of IMMODERATE DISCHARGES.

UNDER the head of diseases specifically cured by Bristol waters, I propose to treat on the subject of female discharges. Let it suffice, in this place, in general, to observe, that in sanguine plethoric habits, Bath water aggravates every symptom.

If





3. "A tradesman's wife of *Cirencester*, about a fortnight after her delivery, was taken with a violent pain in her flank with some swelling, which came (in two months) to be large, hard, and tender to the touch. A green fetid matter was discharged. I ordered her to drink the water, bathe, and inject. The hardness abated, the gleet ceased, she brought forth many children, and is now a buxsome widow."

4. "Guidor's Register informs us the case of a noble lady, who the very first day that she entered the *Cross-Bath*, found herself cured of a *prolapsus uteri*, which had been down for eighteen years."

### III. Of BARRENNESS.

IN his book *De Thermis*, Baccius has rationally accounted for the causes of sterility; he has also pointed out the cure. According to him sterility proceeds from diverse causes, and, therefore, requires diverse methods of treatment. In hardness of the uterus, emollients, and humectants are indicated, in dry hot temperaments especially. Virago's are born with a natural hardness of the uterus; they labour under three causes of sterility, heat, dryness, and hardness. These can be corrected only by assiduous use of tepid emollient baths. For the purpose of conception, Baccius declares that there is no other sort of remedy so certain, or salutary as natural baths, provided they are duly, and rationally administered. *Ad spem sobolis non reperiri aliud remedii genus neque salubrius, neque experientia certius, quam balnea ipsa naturalia, si debite, ac ex ratione ministrata sint* page 117. If sterility proceeds from humidity, or

superfluity of humors, or weaknesſes, it requires baths drying, and not much heating, ferreous, or aluminous. Theſe may be uſed externally, and internally. The *Balneum Caiæ* at *Viterbo* got the name of *the Lady's Bath*, from its particular virtue, ſo did the *Aponum*. The *aquæ caldanellæ* were ſaid *fluores cohibere albos mulieribus, et gonorrhæam viris vimque illis generativam adaugere*.

Cases.

1. In ſchirrous hardneſs, and ſwellings of the womb, warm mineral waters injected, or received by vapour conduce, while total immerſions rather exaſperate. Twelve years ago I met with a caſe which proves the poſition.

1. A married lady came down to Bath with a hardneſs, and ſwelling of the uterus. By the advice of an eminent phyſician ſince dead, ſhe bathed upwards of twenty times in the *Queen and King's* baths. By conſtant bathing her fleſh waſted, ſhe became hectic. Her original complaint continued hard, and became painful. Deſpairing of cure, the Doctor told her at laſt that her diſorder was ſurgical, and out of his way. When I met her ſhe was preparing for her journey, and had ſent away her cloaths. She told me what had been done, and begged my opinion. I told her, that the worſt of her complaints were the effects of *improper bathing*. I adviſed her to go to the country, and drink aſſes milk for a fortnight, and return, which ſhe did. I then directed her to let her maid throw up a pail of warm Bath-water by the help of a flexible ſyringe, every night at home, which ſhe did. By degrees, the pain abated, the ſwelling diminished, and grew ſofter, ſhe recovered fleſh daily. I recommended her to Dr. Smellie, who completed her cure with

“ emol-

"emollients, so that in about eleven months,"  
 "he delivered her of a child."

From Dr. Pierce's *memoirs* I have extracted the following *cases*.

2. "Mrs. Duffwaite was twelve years married without conceiving once. She came to Bath for a palsy. After bathing the second season, she returned home well, and, in a month after, conceived, and had five lusty children at different births."

3. "Mrs. Hawkins of *Marlborough*, 40 years old, had been married thirteen, or fourteen years without a child. She came hither for lameness. By long bathing, she not only got her legs, but her belly up also five different times."

4. "Lady Bliffington, a weak sickly person, married for years, and childless, bathed and drank. By God's blessing, she not only got her health, but became a mother also."

"This is an effect (says the Doctor) so very well known, and so generally believed, that when any woman comes hither that is childless, they presently say, *she comes for the common cause*. To instance all who have sped in this errand since my living here, were to fill a volume."

5. "Mrs. Clement of *Bristol*, aged 40, had several children, but buried them all. She had not conceived in nine years. She came and bathed for *rheumatic pains*. Soon after she conceived, and brought forth twins."

6. "The very same happened to a worthy gentlewoman Mrs. Horton of *Comend*."

7. "Mrs. Davers of *Monkes* had eight children, but being ill of a scorbutic habit, with weakness of her limbs, she bred not for six years. I ordered her the Bath, which, with

## DISEASES CURED

“ other helps, restored her health. Soon after  
 “ her return she conceived, and brought forth  
 “ a son. She came to Bath again fearing a re-  
 “ lapse. By drinking the waters only, she  
 “ soon conceived. She had afterwards two mis-  
 “ carriages and a lusty boy at 44.”

## IV. Of ABORTION.

*Prevent  
miscarriage.*

THERE are not wanting instances of women apt to miscarry, who, by the use of mineral waters, have been enabled to go through with their burdens.

In such cases Baccius gives numerous instances of the power of the *Porretanae*, *Albulae*, and many other detergent strengthening waters, internally and externally applied.

*Cases.*

Savonarola (*De balneis vallis Chaim vulgo dict. balnea dominarum*) expresses himself thus. “ This bath has received great commendation in disorders of the womb, in *passionibus matricis*, by preparing it for conception, cleansing, absterging, and strengthening all those faults which proceed from causes cold, and moist. It provokes the menses. For such purposes, the ladies frequent it daily, *pro hisque passionibus mulieres indies id invadunt*.

1. Guianerus (*De balneis aquensibus Cap. 3.*) relates the following memorable case. “ A certain lady (by reason of an obstinate white flux) could not conceive. The matter was sometimes so fetid, that she loathed herself. After due preparation, she used the warm bath, and drank the water. Thus, cured of the whites, she went home, conceived, and in due time, brought forth a boy, *menstruis albis purgatis, domi praegnans facta, puellum enixa est*.

2. “ Mrs.



## BY BATH WATER.

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2. "Mrs. Sherrington, after many miscarriages, came, bathed, and drank the waters for five or six weeks. In three years, she brought forth three children at different births."

3. "Mrs. Howard, formerly maid of honour to the dutchess of York, conceived ten times, but never carried any to the full time. She came and bathed five weeks. Soon after her return she conceived, and brought forth a daughter in due time, as she did afterwards a son."

4. "Lady Kilmurry miscarried thrice. She used the bath only five weeks, returned, conceived, and carried her burden to maturity. She miscarried twice or thrice again, came back, bathed again. In due time, she had a daughter."

## V. Of PREGNANCY.

INSTANCES of women who have drank *Water* and bathed during their pregnancy without mis-*safe, dur-*carriage. *ing preg-* *nancy.*

1. "Mrs. Howard of *Yorkshire*, came hither May 1690, for a weakness in her lower limbs, for which she bathed six or seven weeks till she was cured. She was young with child just before she set out for this place, as appeared afterwards by her reckoning when she was brought to bed of a lusty girl."

2. "Mrs. Floyer had often miscarried, she was very hysterical. She was with child all the time while she bathed and drank as appeared by the time of her delivery of a son, the strongest she ever had. She passed her month better than ever, which was imputed to the bathing."

C c 2

3. "La-

## DISEASES CURED

3. " Lady Cooke, the wife of a city knight, came down with some relations for pleasure. As she was here, she was willing to bathe for some pains which she was subject to in her limbs, but was doubtful, knowing herself to be young with child. She consulted me. I advised the Cross-bath with moderation. She bathed fifteen times, and was then two months gone, as afterwards appeared by her being delivered of a full-ripe child."

4. " Lady Scarborough came to the Bath for lameness after rheumatism, gout, &c. She bathed even to excess after she found the child quick, imputing the motion only to wind. She miscarried not, for she was, at due time, delivered of a daughter which they called by the nick-name of the *Bath-girl*."

5. " A servant maid of Mrs. Pennington's, a Yorkshire lady, made her mistress believe she was in a dropsy. She desired me to order her somewhat. Having no reason to believe her thoroughly chaste, I ordered her pills made of bread-crumbs. Dr. Oliver also called to see her with me. After examining her belly, he thought he felt the water fluctuate. She had some purging medicines. In time her big belly disappeared all at once. Upon inquiry, it was found that she had bathed often in the hottest part of the King's bath, and had taken violent drastic purges, all in vain. She was delivered of a child at last."

When night-baths were more in fashion, our *women-guides* were in the water sometimes eight or nine hours a day, many of them have been with child, and yet no instances of miscarriage.

## BY BATH WATER.

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*Pudendorum vitiis minerales aquae valde conveniunt*, says Baccius, p. 118. *Sunt enim hae naturaliter siccae, ac siccis ex aequo medicamentiis haec loca indigent. Humida saniosa, ac fistulosa sedis ulcera, et quae uteri cervicem obsiderint, non possunt ullis aquae praesidiis percurari, quam naturalibus balneis; tum aquis, de more, bibitis, tum iisdem per catheterem in loculos ipsos infusis, et calefactis hieme, quibus nos feliciter usi sumus, etiam in saevo ulcere intestini caeci, quod penetrans, tractu temporis, foras in inguen, ex ipso ulcere (mirum) exhibitas reddebat aquas.—Percuratam similiter per ejusmodi balnea in Aenaria scimus illustrem Dominam Neapoli, quae cancrum occultum medicorum judicio, aut schirrum alioquin incurabilem, inter abdomen et uterum erat diu perpeffa.* “By injecting warm mineral water, I happily cured a cruel ulcer of the gut *caecum*, which penetrating, in tract of time, passed the waters which the woman drank by an opening in the groin. In the same manner, I know a lady of quality cured at *Naples*, who had long suffered by an occult cancer, or incurable schirrus seated between the abdomen and the womb.”

Thus having pointed out those aids which women receive from mineral waters, we next proceed to show in what cases, they may be serviceable to their little offspring.

## C H A P. XIII.

### *Of the DISEASES of CHILDREN.*

**C**HILDREN while they are well, and virtuously inclined are the greatest comforts. *Diseases of children.* When sick, or vitious, the greatest discomforts. Those disorders which fall under the power of Bath-

*Causes.*

Bath-waters generally are entailed on children by their parents, nurses, or external accidents.

Those who are diseased themselves may in some measure repair hereditary taints by the prudent choice of nurses. It is not only necessary that a nurse be healthy; she ought also to be sober, careful, virtuous, and chaste.

From hereditary taints, from want of care, from bad milk, from natural defect in the digestive organs, and from external injuries proceed *rickets*, *lameness*, and *dwarfishness*. By the external use of Bath water these complaints may be relieved, and often cured.

*Cases.*

FROM Pierce's *Memoirs* we have the following examples. 1. "Miss Jeppe inclined to one side, her legs were crooked, her belly was hard and distended, she was so very weak that I could not allow her to go into the bath but seldom. What was wanting in this way, was made up in time. During her first trial, she got so much advantage as encouraged her grandmother to send her for the three following summers. Whilst she bathed, she used a swing also.

"Her legs became straight and strong. The hardness and distention of both hypochondres fell by degrees. She recovered, and became the mother of healthy children."

2. "Master Skippewith, aged ten years, had the rickets in his infancy to a degree. As to his inward health, he was much recovered. His lower limbs were very crooked, his knees knocked against one another, his shin-bones bended outward like a bow.

"He bore the bath well; by my direction, he learned to swim, which, I think, contributed much to his recovery. Thus he outgrew his weakness, and, in a great measure, his crookedness."

3. "Ger-



3. " Gersham Carmichael of *Scotland* was supported with irons, crooked in his knees, shins, and ankles. He came hither for four seasons. He outgrew his weakneses, and distortions; is now, as I am informed, a lad of good reputation at the Univerfity of *Glasgow*."

4. " Mr. Farwell, aged fix, looked plump, fresh and ftrong while he fat on the table. When the nurse fet him down, there appeared a weaknefs at the fmall of his back, with a contraction of his lower limb from the hips downward, infomuch that his legs could not fupport his body, nor could he fuffer them to be extended. He ate, drank, and fleeped well.

" After fome little preparation, he was put into the Bath, at firft twice a week, then every other day, and at laft every day, except fundays. In the firft fix weeks, there was very little alteration for the better. After ten weeks he went home, and returned next year, when he was able to run about, and whip his top. He got ftill more ground this time, and, by his not returning, I am apt to believe he is much better."

5. " My own grandchild was trusted to a nurse as healthy and likely as could be found. For fear of lofing her wages fhe continued to give fuck till fhe had gone thirteen or fourteen weeks.

" This corrupted the child's blood fo that he was fubject to frequent fevers with eruptions, or boils, the confequence of which wasthat one of his legs was waftef and weak, fo that when he was four years old, we could not venture him to go alone. We often thought one foulder higher than the other;

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## DISEASES CURED, &amp;c.

“ other; to remedy which, we put him into a  
 “ neck-swing, which being constantly used af-  
 “ ter bathing, rendered him straight and strong.”  
 “ Many stunted in their growth have bathed  
 “ with success, particularly the marquis of Wor-  
 “ cester’s eldest daughter, and other children,  
 “ and great grand children of the dutchess of  
 “ Beaufort’s.”

Experience proves the success of ricketty stunted children. Every woman guide can re- count scores of examples.

“ Some years ago Mr. Chisholm aged fifteen,  
 “ the son of a silver-smith, *Sobo*, came to Bath  
 “ for a wry neck. By the advice of an emi-  
 “ nent physician since dead, he bathed for four  
 “ months without the least benefit, and no  
 “ wonder, for he bathed the whole body. For-  
 “ bidding total immersion, I ordered the con-  
 “ tracted side to be pumped every night, and  
 “ anointed, while the opposite side was foment-  
 “ ed with stupes wrung out of cold water im-  
 “ pregnated with salt. This method he con-  
 “ tinued for four months with such advantage,  
 “ that I advised him to go home, and complete  
 “ the cure by pumping with warm water, and  
 “ fomenting with cold. His head has, many  
 “ years, been quite streight.



*The End of* VOL. I.